

# The United States MILLER

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E. HARRISON CRAWFORD. { Vol. 16, No. 1. }

MILWAUKEE, NOVEMBER, 1883.

{Terms: \$1.00 a Year in Advance.  
Single Copies, 10 Cents.}

## IF + NOT + MORE!

North East, Pa., Aug. 28, 1883.

The John T. Noye Manufacturing Co., Buffalo, N. Y.

GENTLEMEN:—We have now been running the Rounds' Sectional Roller Mill with Stevens' Corrugations for sixty days, and with the best of results. Before making the change from stones to the roller system I spent two weeks in Ohio and Michigan, visiting some of the best Roller Mills, and I must say that I saw no better work than I am doing now with the Rounds' mill. I am satisfied they are all they are represented to be, if not more.

Yours respectfully,

**E. SCOULLER.**

Address for Full Particulars

### THE JNO. T. NOYE MANUFACTURING CO.,

BUFFALO, N. Y.

[Mention the UNITED STATES MILLER  
when you write to us.]



[SECTIONAL VIEW SHOWING WIRE STAPLES]

## PATENT METALLIC FASTENED WIRE CLOTH BINDING

### FOR BREAKS OR SCALPING REELS. SIMPLE! DURABLE! CHEAP!

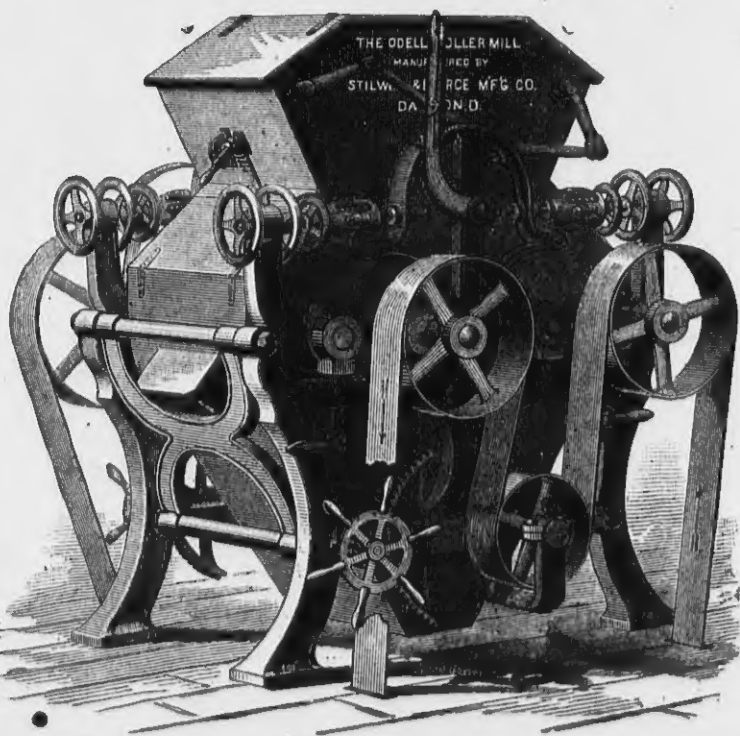
FULLY PROTECTED BY PATENTS.

Prevents all Breaking of the Wire Cloth at the heads of the Tacks or edges of the ribs. The Cloth is more easily put on, can be thoroughly stretched, will wear longer and do better work. Send for samples and prices.

**EDW. P. ALLIS & CO.,** Sole Manufacturers,  
Reliance Works, Milwaukee, Wis.

## Odell's Roller Mill System

Is now in successful operation in a large number of mills, both large and small, on hard and soft wheat, and is meeting with Unparalleled Success. All the mills now running on this system are doing very fine and close work, and we are in receipt of the most flattering letters from millers. References and letters of introduction to parties using the Odell Rolls and System, will be furnished on application to all who desire to investigate.



## Odell's Roller Mill!

Invented and Patented by **U. H. ODELL**, the builder of several of the largest and best Gradual Reduction Flour Mills in the country.

### AN ESTABLISHED SUCCESS

WE INVITE PARTICULAR ATTENTION TO THE FOLLOWING

#### POINTS OF SUPERIORITY

possessed by the Odell Roller Mill over all competitors, all of which are broadly covered by patents, and cannot be used on any other machine.

1. It is driven entirely with belts, which are so arranged as to be equivalent to giving each of the four rolls a separate driving-belt from the power shaft, thus obtaining a **positive differential motion** which cannot be had with short belts.

2. It is the only Roller Mill in market which can **instantly be stopped without throwing off the driving-belt**, or that has adequate tightener devices for taking up the stretch of the driving-belts.

3. It is the only Roller Mill in which **one movement of a hand-lever spreads the rolls apart and shuts off the feed at the same time**. The reverse movement of this lever brings the rolls back again exactly into working position and **at the same time turns on the feed**.

4. It is the only Roller Mill in which the moveable roll-bearings may be adjusted to and from the stationary roll-bearings **without disturbing the tension-spring**.

5. Our Corrugation is a decided advance over all others. It produces a more even granulation, more middlings of uniform shape and size, and cleans the bran better.

**We use none but the BEST ANSONIA ROLLS.**

OUR CORRUGATION DIFFERS FROM ALL OTHERS, AND PRODUCES

**LESS BREAK FLOUR and MIDDINGS of BETTER QUALITY.**

Mill owners adopting our Roller Mills will have the benefit of Mr. Odell's advice and long experience in arranging mills. Can furnish machines on Short Notice. For further information, apply in person or by letter to the sole manufacturers.

## STILWELL & BIERCE MANUFACTURING CO.,

Agents for Du Fours Bolting Co.

[Mention this paper when you write to us.]

DAYTON, OHIO, U. S. A.



**THE LARGEST MILL FURNISHING ESTABLISHMENT IN THE WORLD.**

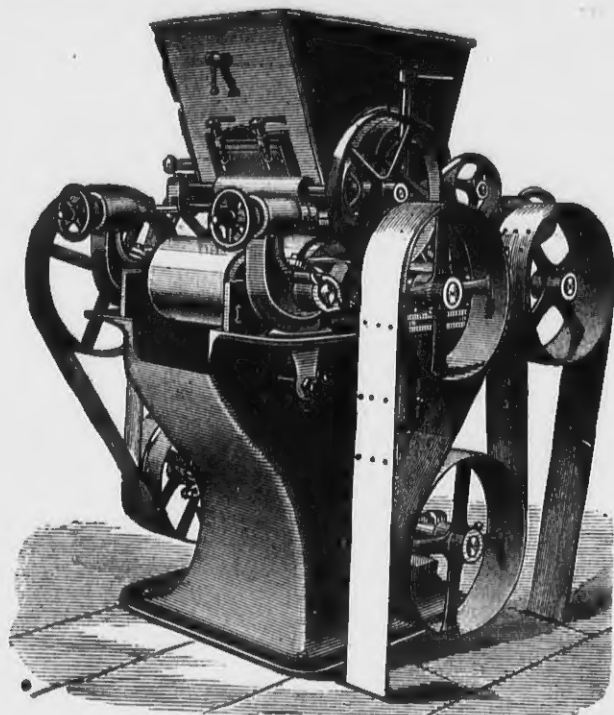
**RELIANCE WORKS,**

**EDW. P. ALLIS & CO. Prop's.**

**MILWAUKEE, WIS., U. S. A.**

**SOLE MANUFACTURERS OF**

**Gray's Patent Noiseless Belt**



**ROLLER MILLS**

**WITH**

**Wegmann's Patent Porcelain Rolls.**

**Unexcelled for reducing Middlings to Flour.**

**Far ahead of Smooth Iron or Scratch Rolls and entirely superseding the Mill Stones for this purpose.**

**Read the Following Letters.**

Messrs. E. P. Allis & Co., Milwaukee, Wis.

Gentlemen:—We are very much pleased with the whole eight set of Porcelain Rolls you put in our Mill. The two double set sent us soon after starting up our mill last fall, we put in place of two run of stones for grinding our coarse Middlings.

We find the Flour from the Porcelain Rolls much more evenly granulated and much sharper and cleaner than that we got from the stones, besides the second or fine Middlings are much better, being almost entirely free from germs and not as specky.

Yours Truly,

KIDDER BROS.

[Mention this Paper when you write to us.]

Terre Haute, Ind., Aug. 22nd, 1882.

Messrs E. P. Allis & Co.

Kings County Flour Mills, Brooklyn, N. Y., Aug. 15th, 1882.

Gentlemen:—You ask how I like the Porcelain Rolls as compared with Mill Stones. I have been using the original Porcelain Gear Machines for five years and became convinced a long time ago that Mill Stones could not produce as satisfactory results.

I am now operating your Improved Machine of increased size with nice adjustments, working without noise with Gray's Patent Belt Drive. The Flour it produces is beautifully grainy and strong and its capacity two or three times more than the old Gear Machine.

It runs splendidly, gives no trouble, consumes less power than Mill Stones, dispenses with costly stone dressing and for reducing Middlings and soft branny residuums and tailings is unequaled by any Machine, iron or stone, at least this is my opinion after five years of practical experience.

Yours truly,

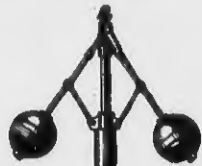
JOHN HARVEY,

Head Miller Kings Co. Mills, Brooklyn, E. D.

**ALSO SOLE MANUFACTURERS OF THE CELEBRATED**

**REYNOLDS'**

**Over Three Hundred of these Engines in use.**



**CORLISS ENGINE**

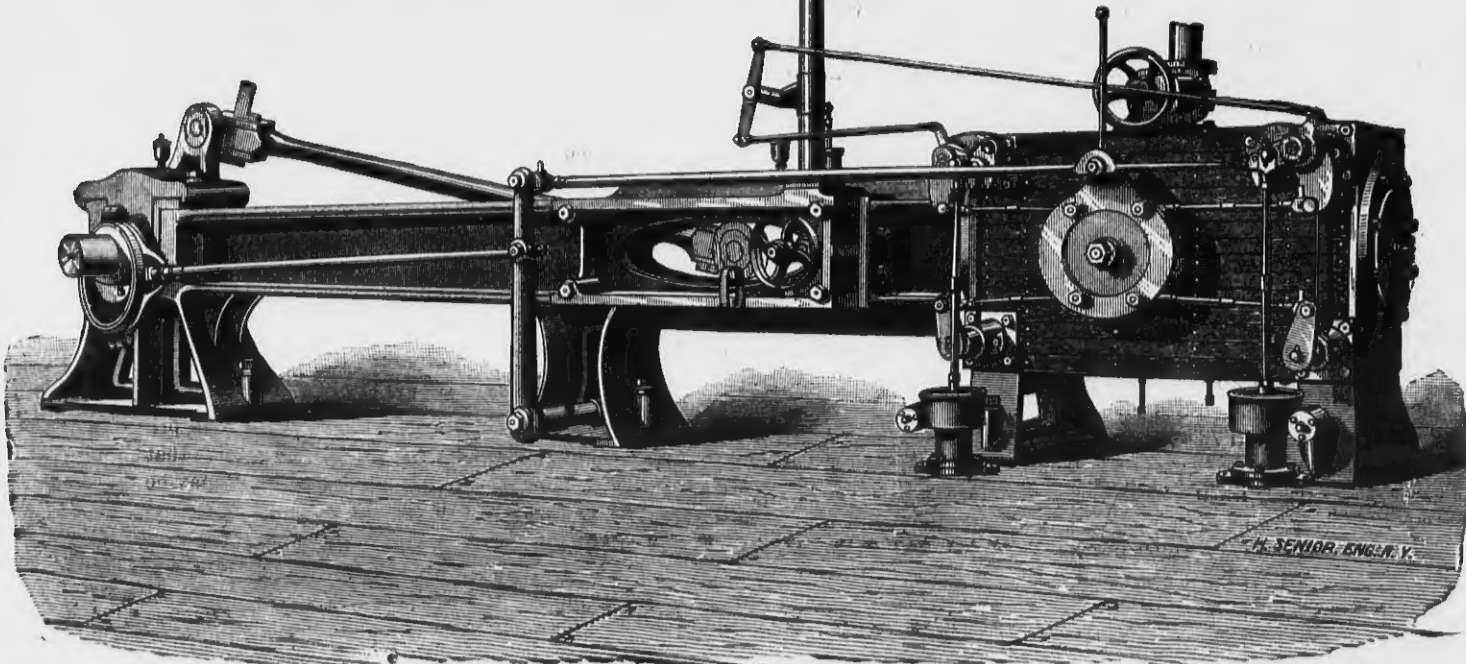
**These Engines are especially adapted for use in Flouring Mills—being unsurpassed in Simplicity, Durability and ECONOMY OF FUEL, and far ahead of any other**

**Automatic Cut-off Engines.**

Send for catalogues of Roller Mills, Flour Mill Machinery, Saw Mill Machinery, Reynolds' Corliss Engines, etc., etc., address:

**Edw. P. Allis & Co.,**

**MILWAUKEE, WIS.**



**The following is a partial list of Flouring Mill owners who are using the Reynolds' Corliss Engines.**

J. B. A. Kern.....Milwaukee, Wis.	Albert Wehausen.....Two Rivers, Wis.	L. H. Lanier & Son.....Nashville, Tenn.
LaGrange Mill Co.....Red Wing, Minn.	Green & Gold.....Faribault, Minn.	Wells & Nieman.....Schuyler, Neb.
New Era Mills.....Milwaukee, Wis.	Meridan Mill Co.....Meridan, Minn.	Grundy Centre Milling Co.....Grundy Centre, Iowa.
Daisy Flour Mills.....Milwaukee, Wis.	Townsend & Proctor.....Stillwater, Minn.	B. D. Sprague.....Rushford, Minn.
Winona Mill Co.....Winona, Minn.	Sooy & Brinkman.....Great Bend, Kansas.	The Eisenmeyer Co.....Little Rock, Ark.
W. D. Wasburn & Co.....Anoka, Minn.	Frank Clark.....Hamilton, Mo.	A. W. Ogilvie & Co.....Montreal, Canada.
Archibald, Schurmeier & Smith.....St. Paul, Minn.	N. J. Sisson.....Mankato, Minn.	Geo. Urban & Son.....Buffalo, N. Y.
White, Listman & Co.....La Crosse, Wis.	Jas. Campbell.....Mannannah, Minn.	A. A. Taylor.....Toledo, O.
Milwaukee Milling Co.....Milwaukee, Wis.	C. J. Coggin.....Wauconda, Ill.	Pindell Bros. Co.....Hannibal, Mo.
Stuart & Douglass.....Chicago, Ill.	J. J. Wilson.....Algona, Iowa.	Kehler Milling Co.....East St. Louis, Ill.
Stillwater Milling Co.....Stillwater, Minn.	Ames & Hurlbut.....Hutchinson, Minn.	Walsh, DeRoo & Co.....Holland, Mich.
Otto Troost.....Winona, Minn.	Lincoln Bros.....Olivia, Minn.	Goodlander Mill and Elevator Co.....Fort Scott, Kas.
E. T. Archibald & Co.....Dundas, Minn.	Northey Bros.....Columbus Junction, Iowa.	W. Seyk & Co.....Kewaunee, Wis.
C. McCreary & Co.....Sacramento, Cal.	Bryant Mill Co.....Bryant, Iowa.	Topeka Mill and Elevator Co.....Topeka, Kan.
Gardner & Mairs.....Hastings, Minn.	David Kepford.....Grundy Centre, Iowa.	Strong Bros.....Graceville, Minn.
J. Schuette & Bro.....Manitowoc, Wis.	Waterbury & Wagner.....Janesville, Minn.	C. A. Roberts.....Fargo, D. T.
Minnetonka Mill Co.....Minnetonka, Minn.	W. A. Weatherhead.....South Lyons, Mich.	Coman & Morrison.....Fox Lake, Wis.
J. D. Greene & Co.....Faribault, Minn.	Geo. Bierline.....Waconia, Minn.	J. G. Schaapp.....Grand Island, Neb.
F. Goodnow & Co.....Salina, Kansas.	James McCafferty.....Burton, Mo.	Fred Schumacher.....Akron, Ohio.
A. L. Hill.....Faribault, Minn.	Geo P. Kehr.....Menomonee Falls, Wis.	Warren Mfg. Co.....Warren, Minn.
Beynon & Maes.....Owatonna, Minn.	Winona Mill Co. compounding their present 24x60 Winona M.	
Eagle Mill Co.....New Ulm, Minn.	Forest Mills Co.....Forest, Minn.	



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## CLEANING RICE IN SAN FRANCISCO. THE INDIA RICE MILL.

The question of cleaning rice in San Francisco has received new life since the late changes in the tariff. These leave a difference of 40c. per pound in duty between cleaned rice and that needing to be cleaned. It does not cost 40c. per pound to clean rice in San Francisco, but what it does cost is known only to the owners and managers of the India rice mill—the only one of the kind on the Pacific coast. It is, however, enough to cause capital to take a deep interest in the proper preparation in this city of an article used by one hundred thousand Chinese in this country, four hundred millions in Asia and a large number of millions of Americans and Europeans to whom rice is a luxury rather than a necessity. When it is known that we import forty to sixty millions pounds of rice a year, and that in the dim uncertain future, perhaps, three-quarters of a cent may be realized on the—say forty millions pounds—the value of the rice mill, from an industrial point of view, may be measured.

It is, however, only by the exercise of inventive skill that this three-quarters of a cent may be made, and there is a secret in connection with the process employed here that is known only to the parties concerned. What the secret is we do not know, but we have seen the mill that cleanses it and can tell a little of what we saw. Under the pilotage of Everett Jones, of the firm of S. L. Jones & Co., we wended our way to 105, 107 Fremont street the other day. Here is the outer shell of the mill, a stout frame building, that has been used several times and witnessed many strange doings in San Francisco. It is two stories in height and covers a lot 70x70. The first floor is devoted to storing the uncleaned rice or the paddy, as the case may be. Here also may be found the bales of mats for the prepared rice and of rattans for securely binding them. Here also is the place where the rice to be operated on is emptied into a receptacle, whence it is carried from the hopper to the top story of the mill. Having seen it dropped here, we climbed up stairs to see what became of it. There we found a stream of the purest, cleanest, nicest rice we ever saw, coming forth from the mill. This was next packed in 48-pound bags, and was ready for sale. The packing is done on the second floor by two Chinamen adept in the business, who put it up with rattan binding the same as is done in China. The rattans and mats are imported in bales from China, about four pounds of rattan being used with every mat. The latter come along 250 in a bale. After seeing all this we were taken into the secret recesses of the mill. Here we found three mill's in operation. The first loosens the husk, the second breaks it, the last one cleans the rice thoroughly. With paddy, which is rice in the hull, imported from the Sandwich Islands, five mills are used. The state of each mill can be known only by applying the ear to it, and then the sound of grinding tells the practised miller whether the rice is being ground too fine or not. One result of the process is a fine mealy substance resembling bran, which sells at the same price, but which, it is claimed, will feed twice as many cows as an equal quantity of bran. There are other products, but of these we forbear to speak. One thing we learned what will be new to most of our readers, and that is that no Chinese will eat rice until it has been prepared by being mixed with it in the process of grinding a powder known as chinam, a description of kalsomine prepared from some species of pulverized rock. It gives the rice a gravelly feel in the hand and a darker color. What virtues, if any, are ascribed to it, we did not learn. About four barrels of it are used with 5,000 pounds of rice, and it costs \$4.50 per barrel. As, however, about half of it has to be thrown away, there are really eight barrels used. An attempt is being made by the miller, Mr. Rose, to reduce the quantity.

The rice now being cleaned was brought here by the McLaurin, 1,500 mats of it, 198 pounds to the mat. Some time since the mill cleaned paddy for Messrs. Grinbaum & Co., leading importers of Hawaiian produce. In 12 hours it can clean 225 to 245 bags of Hawaiian rice, and it has cleaned 600 bags of mixed rice. It has, therefore, a capacity of 184,800 bags a year.

A few months since a fine engine of 90-horse power, and with an immense fly-wheel, and in splendid condition, was put in. It was built by the Union Iron Works. It is an O'Neill Cut Off. It has run smoothly ever since it was first set up. It is fixed in a concrete foundation 14 feet deep. The whole cost \$6,000.

Everything about the mill is in trim order and workmanlike condition. The miller, Mr. Rose, has been in the business 30 years, 21 of which has been devoted to this particular mill. He knows everything about it with a particularity impossible to any one but a born miller. He lost two of the fingers of his left hand in it. He was in the accident on the South Pacific Coast Railroad a few years since, and received \$6,000 for his injuries. He is assisted in his labors by five white men and seven Chinamen. The mill has been at its present location 12 years. It was at one time at North Point, then on Beale, between Mission and Market, when after another removal it reached its present site. The proprietor is Wm. M. Greenwood, but Messrs. S. L. Jones & Co. are also interested, and have been for a great many years back. It is most efficient with its new improvements, and beats anything on the North American continent in the shape of a rice mill.

## THE THEORETICAL CALORIFIC VALUE OF FUELS.

The many tests made on the continent during the past fifteen or twenty years have not furnished much material of value for ascertaining the comparative efficiency of boiler-furnaces, and the combustion of fuel in them. As Mr. William Kent pointed out recently, the few data on record here cannot be accepted, although some of them appear to us to possess a value as giving data as to the relative merit of different kinds of fuel. The Germans, in their thorough way of taking up technical subjects, have quite recently struggled with this one, the two leading associations, the Society of Engineers and the Association of Steam-Boiler Users, appointed a committee which has just reported. Mere competitive tests, without full examination of the entire process of combustion, are of little use. The work of the fireman must be checked by chemical analysis and a complete set of observations. There are cases on record where the same fireman, using the same coal in the same boiler on two successive days, evaporated 8.45 and 7.37 pounds of water per pound of fuel. The Germans, therefore, insist that the only means of getting at a good estimate of the work of a fireplace is to analyze the gases of combustion, and compare the loss of heat through that source with the theoretical calorific value of the fuel. They would thus be saved the expense of many costly experiments to test boiler appliances and settings, for which their inventors generally claim, in a modest way, a saving of at least from 20 to 30 per cent. of fuel. It is true that such an examination of the gases entails expenditure and is troublesome; but the results afford a clew to many sources of loss, and thus pave the way for an improvement.

The report of the committee referred to gives interesting instructions on the method of computing the theoretical calorific value of a fuel and the loss through the escaping gases of combustion.

The quantity of air,  $L$ , required for the complete combustion of a kilogram of fuel, containing by analysis  $c$  parts of carbon,  $h$  parts of hydrogen,  $s$  parts of sulphur,  $o$  parts

\*From a paper read before the Society of Public Analysts on the 28th of July, 1883, by Otto Hehner.

of oxygen, and  $w$  parts of water, may be calculated as follows:

$$\left( \frac{2.667c + 8h + s - o}{21 \times 1.48} \right) \times 100 = L \text{ cubic meters.}$$

There are wide variations in the data chosen in the computation of the calorific value of fuel according to the Dulong formula. Some make use of the simple formula.

$$W = 8000c + 34,500(h - \frac{1}{2}o).$$

Others make deductions for the hygroscopic water, as under:

$$W = 8000c + 34,400(h - \frac{1}{2}o) - 637w.$$

Others take into account the heat required to evaporate the total water formed during the process of combustion, like Ferrini, who uses the following formula:

$$W = 8100c + 34,500h - 600(w + 9h)$$

The most accurate method is certainly to use the calorimeter; but the determinations with its use are so troublesome that, for practical purposes, computation from elementary analysis of the fuel will probably be generally retained. The commission rejects the practice of assuming that the oxygen found by analysis should be computed as combining with a corresponding quantity of hydrogen in forming water. It is argued by them that due deductions should be made for the fact that, by the combustion of the hydrogen of the coal, steam is produced, which carries off a certain quantity of heat. They therefore reduce the calorific value of the hydrogen to 28,800 instead of 34,220 calories, which is the average of the determinations of Thau, Andrews, Thomsen, Favre & Silbermann, and Schuller & Wartha. They have therefore put forward the formula:

$$W = 8100c + 28,800(h - \frac{1}{2}o) + 2500s - 600w.$$

The theoretical calorific value of a fuel may thus be found from its analysis.—*Coal.*

## THE NEW FLOURING MILLS OF J. K. MULLEN & CO., IN DENVER, COLORADO.

It has been the boast of Colorado for a number of years that the article of flour produced here is superior to that of any other state in the Union. This fact is largely due to the excellent quality of wheat grown here, but experience has shown that poor flour may be produced from good wheat when placed in the hands of incompetent millers, or where inferior machinery is used. The old mill-stone that has done such good service in the past has seen its day and is now being replaced with more improved machinery, which, instead of grinding the wheat so fine that it is impossible to separate all of the woody substance from it, takes it through a series of rollers, each set a trifle closer than the preceding one until the last one is reached, which delivers the pure kernel of the grain entirely separated from the bran or woody substance.

In 1879, now nearly five years ago, Messrs. J. K. Mullen & Co., introduced into their flouring mill, corner Lawrence and Eighth streets, the first pair of rolls ever sent to Colorado. At that time the introduction of the rolls was considered the wildest kind of an experiment, and the miller who would think of replacing the old millstone with a set of rolls would be considered a novice in the milling business. The use of the first set of rolls was satisfactory to them, and was followed by three more double sets, and in June, 1881, they put in their mill twenty-two sets of rolls and retained six run of stone, and since that time they have operated their mill steadily, day and night, on Colorado wheat.

As this mill was not of sufficient capacity to meet the requirements of their business, they decided to build a new and larger one, and work was begun in February of this year, under the supervision of Mr. J. A. McIntyre, who, before a brick was laid, designed the entire building, and located the exact position of every machine, pulley, and belt in the immense building. The magnitude of this undertaking cannot be realized except by a per-

sonal inspection of the network of machinery, belting, gearing, etc., occupying the seven floors of the building, and all driven by one mammoth engine. The main building is 90x65 feet, the foundation being four feet of solid masonry. The walls are thirty inches at the base, and taper to sixteen inches at the top. The timbers supporting the several floors are massive and strong.

The engine room is 30x40 feet and contains the largest engine in the State, it is of the Reynolds-Corliss' pattern, four hundred-horse power and drives machinery requiring two miles of belting with apparent ease. The fly-wheel is eighteen feet in diameter and is supplied with a thirty-two-inch belt. The exhaust from the engine is forced into a condenser which returns the water to the boiler, thus saving considerable power. The wheat is unloaded direct from the cars into a "conveyor," from which it is taken by the elevator to the garners above. These garners will hold about 10,000 bushels. A car is unloaded in this way in twenty-five minutes. From the garners the wheat is taken as desired and wet down twenty-four hours before grinding, having previously passed through a cleansing process. The first set of rollers through which it passes barely cracks the grain, the second squeezes it a little harder, and so on, until it has passed through twenty-four sets of rolls, producing what is called middlings, a separation having been made between each set, thus gradually separating the flour from the bran. It then goes through the same number of rolls again, which produces the three grades of flour, about 30 per cent. being what is known as patent flour. Throughout the entire mill is a system of dust collectors, a recently patented invention, which, as its name indicates, collects the dust, and it works to a charm. Of the many other machines and devices we have not the space to speak. The whole works automatically, and from the time the grain is taken from the cars, it is not touched except by machinery, until the sack is filled and ready to be sewed up.

The capacity of the mill is about one thousand and sacks of flour every twenty-four hours. The machinery was all furnished by E. P. Allis & Co., of Milwaukee, Wisconsin. They now have contracts to supply machinery of a similar kind in different parts of the State. Mr. J. A. McIntyre, who represents the firm in Colorado, is thoroughly conversant with his business, and is doing much to elevate and improve the quality of flour produced in Colorado.—*From Denver Republican, Oct. 1883.*

A PENNY WATER PURIFIER.—Mr. Frederick Guthrie, of the Science Schools at South Kensington, sends to the *Pall Mall Gazette* suggestions for making a penny water cleanser. Proceeding upon the principle of aeration, and the assumption that subtle as the disease germs in water may be they shall not escape the touch of the oxygen. Mr. Guthrie argues that to thoroughly purify water it should be allowed to run over as large a surface as possible, and while so running it should be freely exposed to the air. To make the filter, a flower-pot and a brick are required. Break the bottom out of the flower-pot in such a way as to leave edge enough to hold up half a brick. Let one corner of the half brick stand out through the bottom hole. Break up the rest of the brick into bits about as big as a quarter of a walnut, and throw them into the pot. Soak the whole overnight in a pail of water and let it drain. The water which is to be purified should be allowed to drip upon the middle of the chips of brick, and after a few hours the water which drops from the bottom will be perfectly pure and wholesome. This purifier, unlike most of those in general use, combines a rather coarse filtration with an effective aeration, and something of a specific chemical action as well.

LOUISIANA is reported to have an excellent corn crop this year.



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MILWAUKEE, NOVEMBER, 1888.

## ANNOUNCEMENT:

WM. DUNHAM, Editor of "The Miller," 69 Mark Lane, and HENRY F. GILLIG & Co., 449 Strand, London, England are authorized to receive subscriptions for the UNITED STATES MILLER.

We send out monthly a large number of sample copies of the UNITED STATES MILLER to millers who are not subscribers. We wish them to consider the receipt of a sample copy as a cordial invitation to them to become regular subscribers. Send us One Dollar in money or stamps, and we will send THE UNITED STATES MILLER to you for one year.

The United States Consuls in various parts of the world who receive this paper, will please oblige the publishers and manufacturers advertising therein, by placing it in their offices where it can be seen by those parties seeking such information as it may contain. We shall be highly gratified to receive communications for publication from Consuls or Consular Agents everywhere, and we believe that such letters will be read with interest, and will be highly appreciated.

## ATTENTION FLOUR MILL OWNERS.

We desire all flour-mill owners to write to us, giving us their correct address, with post-office, county and state. Please state also capacity of mill in barrels per day of 24 hours, what kind of power is used, and whether stones or rollers or both stones and rollers are used. Your compliance with above request will confer a benefit not only on us and the mill-furnishers and flour dealers, but on yourself. Address, as early as convenient,

E. HARRISON CAWKER,

Pub. of Cawker's American Flour Mill Directory,  
 116 & 118 Grand Ave.,  
 Milwaukee, Wis.

MINNEAPOLIS flouring mills are reported to have made about 2,000,000 barrels of flour from January 1st to October 30th.

THE flour exhibited at the Cincinnati Exposition, by J. L. Allard of Paducah, Ky., was awarded the silver medal. It was made on Allis' Rolls.

D. G. TEPPER, Esq., called on us yesterday (Oct. 31). Mr. Tepper is the editor of the *Millers' Journal*, New York. He has been on a short visit to Minneapolis and is now on his way home. He reports business moderately fair in the sections he has visited.

THE *Northwestern Miller* suggests a celebration of the day when the first roller-mill was started in America. Yes, by all means let's celebrate that day, and then follow up the "Roller Mill Day" with a "Middlings Purifier Day"; a "Centrifugal Day"; a "Milling Newspaper Day"; and wind up with a "rum 'un" to celebrate the day when George Miller spanked the *Northwestern Miller* through the columns of the *Millers' Gazette*. By "Judas" let's celebrate.

Alderman Hadley, who was entitled, judging by precedents to be elected Mayor of London, was defeated for the reason that he was not supposed to be rich enough to maintain the expensive dignity of the office. Alderman Hadley may be congratulated that he is privileged to attend to his honorable calling as a successful British miller, instead of being worried to death, and perhaps financially crippled by being forced into an office which at this distance seems to be for sale for pounds, shillings and pence.

ONE of the most attractive and best arranged exhibitions of flour mill machinery at the Southern Exposition, Louisville, Ky., is that of Stout, Mills & Temple of Dayton, Ohio. It consists of one Gilbert Combination reduction Roller Mill, and two Livingston double belted mills in motion, and two new American Turbines. The Gilbert Combined Mill is one of the latest and most successful inventions in milling machinery. It is used in a gradual reduction roller mill to make the breaks. The products from the machines are finished bran for the duster and middlings for the finishing rolls or stones, and purifiers. Besides making the breaks, it does all scalping and elevating between same, and aspirates the product after each separation, doing away with an immense amount of machinery. The Livingston belted mill is another late invention in grain reducing machinery, and is undoubtedly one of the best in the market. Some of its principal features are its simplicity of construction, yet perfect adjusting devices, belt drive,

most complete screw tightener, and many others, too numerous to mention here. The new American Turbine is so well known that it is unnecessary to dwell upon its merits generally. The two on exhibition are of the latest improved pattern, the wheel being one solid casting, making it the strongest wheel made.

No one visiting the exposition should fail to see Stout, Mills & Temple's exhibit, in S. W. Section, Col. D and E, No. 22.

THE bran packer flurry has almost spent its force—and the dollars of giddy experimenters have at the same time vanished. Does any one suppose that \$1,000 will be forthcoming after its "stimulating" effect has been shown?—*The Millstone*.

The above clipping seems to be a kind of insinuation that the \$1,000 premium offered by the Millers' National Association for the invention of a machine for packing bran, which will meet the requirements set forth by the committee in their circular to the public, was not a bona fide offer. We desire to say that it is a bona fide offer—and that the most suitable machine exhibited to the committee, will be awarded the premium—and that the \$1,000 necessary for the payment thereof is now in the hands of the treasurer.

A prominent Milwaukee miller said to us while on 'Change yesterday (Oct. 31): "The milling business is dull, and there is no present prospect of improvement. There is too much flour being made, and put on the market. We have got too many mills both big and little. Millers should make some such arrangement as distillers have. When there is a surplus of whisky on the market, the distillers' association, committee meets and issues an order for every distiller to shut down for a specified time, or to run to only one-half or one-third of their capacity until the consumption in a measure catches up with production, and this is the way that they keep the whole business from going to ruin. The plan is a good one. As it is now millers are compelled to speculate and they often fail at that. It is a thing I cannot understand, why, in the present state of the trade, millers will increase their capacity and build new mills, when everybody knows that knows any thing about it, that we have three times as many mills as we need."

Some other millers consider trade fair, and do not complain. Eastern millers are doing a good business. St. Louis millers claim to have a fair demand for all they can make at good but not fancy prices.

## A NEW OHIO MILL.

The old Amanda Mills, at Amanda, Fairfield county, Ohio, located on Miami and Erie Canal, owned and operated by Messrs. Jewell & Co., have just undergone a complete remodeling to the gradual reduction system. Having a wide reputation for turning out the best brands of flour in this market, by the old process. Messrs. Jewell & Co., were not satisfied to take a back seat, so after careful investigation in regard to the several roller mills and systems now in use, decided to put in the Livingston rolls and system, throwing out all the old bolts, and nearly all the old machinery, replacing them with new bolting chests, centrifugals and purifiers. The plans and all the machinery were furnished by Stout, Mills & Temple, of Dayton, Ohio. The work being superintended and diagram made by Jno. Livingston, milling engineer for S. M. & T. Mr. Geo. Hunker is headmiller, having served in that capacity many years. The mill is 100 barrels capacity, twenty-four hours. It was started up two weeks ago, and everything moved off in perfect order, without a single change being necessary. The flour is right up to the best grades in market, and everything is satisfactory to the proprietors.

## COTTON PICKED BY MACHINERY.

The following telegram appeared in the daily papers on the morning of Oct. 31st:

CHARLESTON, S. C., October 30.—The first bale of cotton ever picked from a field by machinery was exhibited today at the Charleston Cotton Exchange, and attracted general attention. The condition of the cotton is pronounced by cotton men to be as good as the hand-picked. The cotton has the same grade.

What a world of thought, anxiety and wealth has been expended to secure the above noted result, and what a change it will produce in the agricultural labor of the South. It is to the cotton planter of the South what the grain reaper is to the farmer of the North and West. The mechanical cotton-picker will not strike, or go off to camp-meeting, when the crop is ready for harvest, but will take the place of thousands of too often indolent colored laborers. It will in the end prove a blessing to the colored people of the South, for they will be compelled to seek other channels of labor which will require of them greater cultivation and use of their mental faculties.

## RECENT MILLING PATENTS.

- No. 284,648. Grinding Mill.—Gustavus B. Maynard, Boston, Mass., assignor of one-half to Wm. H. Cilley, same place.  
 No. 284,672. Machine for Cleaning Grain.—John R. Reynolds, Jackson, Mich.  
 No. 284,726. Apparatus for Grain-Drying and Coffee-Roasting.—Wm. W. Dunn, Fort Worth, Tex.  
 No. 282,211. Machine for Cleaning Flaxseed.—Lyman Morgan, Fort Washington, Wis.  
 No. 282,357. Millstone Ventilator.—Hermann J. Nellesen, Pittsburgh, Pa.  
 No. 282,415. Grain Separator.—P. Van Gelder, Sowerby Bridge, County of York, England. Patented in England, July 18, A. D., 1882, No. 3,415.  
 No. 282,424. Grain Elevator.—Wm. Watson, Chicago, Ills.  
 No. 282,425. Grain Elevator.—Wm. Watson, Chicago, Ills.  
 No. 283,018. Grain Weighing and Bagging Machine.—James B. Felton, Mount Pleasant, Md.  
 No. 283,189. Grain Elevator.—Amy Bardeen, Blackstone, Mass.  
 No. 283,212. Machine for hulling and Granulating Grain.—Giles S. Cranson, Silver Creek, N. Y.  
 No. 283,480. Machine for Cleaning Split Grain.—Louis Gathmann, Chicago, Ills.  
 No. 283,518. Grinding Mill.—Stas C. Schofield, Freeport, Ills.  
 No. 283,597. Millstone Driver.—George C. Gordon, Mountville, W. Va.  
 No. 283,680. Roller Grinding Mill.—Robert Morrell, Montclair, N. J.  
 No. 283,715. Cut-off for Bolting Chest Conveyors.—Lawrence B. Kohnle, and William B. Hamilton, Lima, Ohio.  
 No. 283,778. Grain and Seed Thrasher and Separator.—John H. Hamaker, Canton, Ohio, assignor of one-third to Edwin W. Hamaker and Ulysses S. Hamaker, both of same place.  
 No. 283,814. Centrifugal Reel.—Louis W. Pruss, Minneapolis, Minn.  
 No. 283,899. Bolting Chest.—Lawrence B. Kohnle and William B. Hamilton, Lima, Ohio.  
 No. 283,970. Grain Drier.—Albert E. Clutter, Lima, Ohio.  
 No. 283,981. Grain-Cutting Machine.—William Eberhard, Akron, Ohio, assignor of one-half to George T. Ford, same place.  
 No. 284,136. Roller Mill.—John Livingston, Dayton, Ohio, assignor to Stout, Mills & Temple, same place.  
 No. 284,263. Grain Elevator.—John E. Walsh, New York, N. Y.  
 No. 284,266. Grain Drier and Cooler.—Winsor Beebe, Buffalo, N. Y.  
 No. 284,284. Process of Curing Cereals.—George Davis, Ottawa, Minn.  
 No. 284,324. Endless-Belt Conveyor.—Edward H. Parker, Eau Claire, Wis., and Clark Robinson, Hornellsville, N. Y.  
 No. 284,466. Grinding and decorticating Milk.—Robert H. Minister, Baltimore, Md.  
 No. 284,488. Middlings Purifier.—John Russell, Berlin, Pa.  
 No. 284,489. Grain Cleaner.—John Russell, Berlin, Pa.  
 No. 284,490. Grain Separator.—John Russell, Berlin, Pa.  
 No. 284,535. Millstone Dress.—David D. Brooks, Washington, Edgefield County, S. C.  
 No. 284,561. Flour Sifter.—John E. Welling, Georgetown, Ky., assignor of one-half to Albert Degaris, same place.

## THE TARIFF.

THE WHY AND THE WHEREFORE.

(For the THE UNITED STATES MILLER, by John W. Hinton, of Milwaukee.)

The questions are so often asked, why change the tariff? why advocate free trade? etc., etc., when it is known, that no country in the world has progressed as has the United States; in no other country has wealth been so rapidly accumulated; nowhere else are laborers, mechanics, and all classes, so prosperous, as in our own country. Then, why change a system that has been so prolific of good generally, and so thoroughly "promotive of the general welfare." Wherein is there, or where has any one shown the necessity for a change?

As to the growth and prosperity of our country, I will cite here the letter of Alexander McEwan, of England, to Lord Beaconsfield, December 1, 1879:

"The United States have grown from 20,000,000 of population in 1845 to 50,000,000 at the present day; their exports from \$100,000,000 to \$775,000,000 per annum. Their home trade, carefully protected, estimated now at more than \$5,000,000,000, exceeds our whole home and foreign trade put together. As far as their relations to us are concerned, they are sending us this year over \$500,000,000 of commodities, and taking from us about \$100,000,000, and while we take from America principally food and cotton, the commodities she takes from us are such as she can produce herself, or do, without in case of need. In war she would be independent of us, but in our requirements we are absolutely dependent upon her."

Such is the testimony of one of the ablest men in England, furnished by request to the Prime Minister of Great Britain. Comment is unnecessary—the truth speaks for itself.

There is a class of persons, who favor free trade, for the basest of all purposes, moved thereto by the most mercenary of desires for personal ends, the "general welfare" being totally ignored. This class was well described by the good and grandly benevolent Peter Cooper, in his letter to M. H. Maynard, of Tennessee, May 2, 1872:

"There are thousands of those now engaged in foreign trade, whose fortunes depend upon our filling the country with foreign goods. There are other thousands, who are holders of mortgages, who hope to buy in the property for the face of the mortgages, or for half its present value. And that they will do as soon as they can induce our government to try another experiment in what they call free trade. The policy of these persons, who are all clamoring for free trade, would deprive millions of men of their means of living by mechanical employments, and drive them into competition with the farming and agricultural interests of the country, making the

mechanics competitors of the farmers, instead of consuming, as they now do, ten times as much of the agricultural product of the country as is now sold in Europe."—(Con. Record, 42d Congress, 2d session, page 389.)

While we write, the Lord Chief Justice of England is homeward bound, after an extended visit in this country, a constant ovation, from his landing to his departure.

What is his testimony to the condition of the "general welfare of the United States." The following extract from his speech, at the banquet given him at New York, is a cutting rebuke to his country men in New York, and American agents of the English Cobden Club, who are striving to destroy the manufactures and other industries, and to degrade the labor of this country to a level with that of Great Britain. His Lordship said, Oct. 11th, 1888.

"It is not your colossal fortunes that have interested me, I can see them at home. What I do admire, what I long to see and never shall see in my own dear England, is what may be called your upper and lower middle classes. I have seen among them men who would do credit to any capital in the world. I have seen tens of thousands of houses occupied by the owners of them. I am told that in general your farmers own their farms, your cultivated gentlemen own their houses, and your artisans own their cottages. What a state of satisfaction and content this produces in time of peace! What an irresistible force in time of war!"

Do our free trade friends envy the condition of things, as portrayed by the distinguished Chief Justice of England? If not, why do they seek to change them?

## THE SUPPLY AND PRICE OF WHEAT.

This subject has been one of all absorbing interest to the trade, and there have been printed columns of opinion relating thereto. The following communication from "Observer," a member of the New York Produce Exchange to *Bradstreet's* will, we believe, be perused with interest by our readers. He says:

"All authorities agree that the wheat crop is short compared with that of last year, the deficiency being variously estimated at from 80,000,000 to 120,000,000 bushels. Yet, week after week, for months past, we have seen the price of wheat decline; one, and perhaps the principal reason for the decline in prices is the large and so far continually increasing visible supply of wheat at lake and seaboard ports, and in transit by rail and water. Let us examine carefully whether it is principally to an increase of the supply or to a decrease in the demand for wheat that the visible supply has been increased.

	1882.	Bushels.
Visible supply of wheat September 1.....	12,045,595	
Visible supply of wheat October 13.....	14,488,914	
Increase of visible supply from September 1 to October 13.....	2,443,319	
Export from September 1 to October 13.....	21,286,383	
Total of increase of visible supply and export from September 1 to October 13.....	23,679,702	
Visible supply of wheat September 1.....	21,404,798	
Visible supply of wheat October 13.....	23,869,699	
Increase of visible supply from September 1 to October 13.....	8,464,901	
Export from September 1 to October 13.....	8,145,616	
Total of increase of visible supply and export from September 1 to October 13.....	16,610,517	
Total of increase of visible supply and export from September 1 to October 13.....	23,679,702	
Total of increase of visible supply and export from September 1 to October 13.....	16,610,517	
Decrease in export and increase of visible supply of the year 1883 compared with that of 1882 from Sept. 1 to Oct. 13.....	7,069,185	

From the above statement it is perfectly clear that, as the combined amount of the increase of the visible supply and the export from September 1 to October 13 this year is 7,069,185 bushels of wheat less than during the same period last year, that if the supplies from our farmers of wheat had been as great this year from September 1 to October 13 as they were last season, that instead of the visible supply increasing 8,464,901 bushels from September 1 to October 13 this year it would have increased 7,069,185 bushels more; so that, with the same supplies as last year, the visible supply would have been on October 13, 36,938,884 bushels, instead of what, it is, 29,869,699 bushels.

People should consider that it is not the visible supply that will determine prices until we reach harvest, but it is the quantity of the invisible supply in the hands of our farmers. It is a mistaken idea that a large stock of wheat in the hands of merchants insures future low prices. The position of Indian corn, after the bad crop of 1881 was ascertained, is a case in point. The visible supply of Indian corn in October, 1881, was immense and the largest ever reached, being over 28,000,000 bushels. Did that stock prevent Indian corn advancing in the west, from 41c. to 80c. per bushel within one year, and selling in New York at the end of the harvest year for corn, at 100c. per bushel? and did it prevent the visible supply dwindling from 28,684,661 bushels of Indian corn on October 15, 1881, to 4,481,938 bushels on October 14, 1882? It will, perhaps, be well for parties who think that wheat should be lower in price to keep this in mind, and also that, sooner or later, our farmers from necessity must lesson their



Columbia, Bourne Co., Me.



## UNITED STATES MILLER.

E. HARRISON CAWKER, EDITOR.

PUBLISHED MONTHLY.

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Bills for advertising will be sent monthly, unless otherwise agreed upon.

For estimates for advertising, address the UNITED STATES MILLER.

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MILWAUKEE, NOVEMBER, 1883

We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement was seen in the UNITED STATES MILLER. You will thereby oblige not only this paper, but the advertisers.

1884.

## FLOUR MILL DIRECTORY.

We are now hard at work preparing CAWKER'S AMERICAN FLOUR MILL AND MILL FURNISHERS' DIRECTORY of the United States and Canada for publication and expect to have it ready for delivery on or about January 1, 1884. Flour mill owners can very materially assist us and make this work of greater value to the trade by writing to us and giving the correct name and style of their firm, with post-office address, and also the capacity of their mill in barrels per day of 24 hours, and also the kind of power used—whether water or steam. We shall spare no pains to make this directory better and more complete than any former edition. Our 1882 edition met with great praise from all who used it, and we think our 1884 edition will give still greater satisfaction. It is to the interest of every mill-owner to be correctly represented in this work. It will cost you nothing but a few moments writing and the price of a stamp which now is only two cents. The directory is used by mill-furnishers, commission merchants, flour exporters and importers, dealers in machinery and supplies, and by millers, shipping agents, insurance agents, etc., as a work of reference. It has been found to be indispensable to the transaction of business in the trade.

Address all communications to

E. HARRISON CAWKER,

Nos. 116 & 118 Grand Ave.,  
Milwaukee, Wis.

FLOUR MILL OWNERS—Please send us your address, with capacity of your mill in barrels per day of 24 hours, and also state whether you use steam or water-power, or both.

IMMIGRANTS to the number of 45,719 arrived in the United States during the month of September.

J. W. MAXWELL, of Millersburgh, O., a well-known miller has been arrested on a charge of making counterfeit money.

THE recent rains have proved beneficial to the Minneapolis water power, and the millers have about ceased to complain of a lack of water.

THE millstone is still a subject of deep interest and study by many millers and inventors. Two patents have been issued lately for "improved millstone dress."

THE Minneapolis millers and the railway magnates have settled their differences in a manner which is supposed to be "tolerably satisfactory" to all concerned.

JOHN A. NICOLIN, Esq., the able representative of Wilford & Northway, of Minneapolis, Minn., called on us during the past month. Mr. Nicolin reports business to be good.

MESSRS. D. LATHROP & Co., of Boston, Mass., are doing a most excellent work in publishing a beautifully printed and illustrated young people's magazine named "Wide Awake." This magazine is now in its seventeenth volume and is yearly growing in favor. The subscription price is only \$2.50 per year and

anyone desiring to make a young friend happy would do well to subscribe for it for him.

ROBINSON & MAY of Boston, Mass., purchased at auction the two flouring mills "Gibson A" and "B" in Indianapolis, Ind., for \$65,000, and are now running them.

THE total grain storage capacity of elevators in Manitoba on the line of the Canadian Pacific Railroad, is 1,599,000 bushels, of which the Ogilvie Milling Co. control 437,000.

FLOUR MILL OWNERS—Please send us your address, with capacity of your mill in barrels per day of 24 hours, and also state whether you use steam or water-power, or both.

AN unusually large number of failures have occurred during the past three months in the flour and grain trade. Speculation seems to have been the primary cause in the majority of cases.

A large portion of the Christiana Machine Works at Christiana, Pa., was destroyed by fire Oct. 1st. The works will be immediately rebuilt, and will be ready for business in a very short time.

WILLIAM TRUDGEON, the able western representative of the Richmond Manufacturing Co. of Buffalo, N. Y., paid us a visit Oct. 6th. Mr. Trudgeon was successful in placing several orders with the Milwaukee millers.

ELECTRICITY, thus far has only been used in flouring mills for lighting purposes, for purifying middlings and for registering the number of barrels or sacks of flour packed. Can it not be used for other milling purposes?

THE cry of "frost-bitten wheat" raised quite a commotion during the past month, but, upon investigation, it is apparent that the loss to the crops of Dakota and Minnesota, from this cause, will not be of very great importance.

A considerable amount of spring wheat is damaged this year by the presence of smut. Spring wheat heretofore has been comparatively free from smut. The result is that a great deal of wheat that would otherwise be of high grade will be graded low.

MESSRS. Hoerde & Co., Vienna, Austria, have placed a roller mill with steel corrugated rolls upon the market, and claim that it is superior to chilled iron. It is claimed that they are much more durable than chilled iron, retaining their sharpness longer.

DIO LEWIS'S MONTHLY, is the name of a new magazine published by Frank Seaman, at 68 Bible House, New York City. Price, \$2.50 per year. It is edited by Dr. Dio Lewis, and everybody has heard of him. His style is plain and pointed, and anyone who reads his magazine and follows its teachings will find himself better in body and mind.

DURING the first nine months of the year we exported to foreign countries 6,409,351 barrels of wheat flour, and 50,912,961 bushels of wheat. Our total exports of breadstuffs during this period were of the value of \$130,430,436. Nearly 57 per cent. of our wheat export was in the shape of wheat flour. This showing is certainly encouraging to millers.

It has been frequently said that the handsome appearance of a food package was often the cause of its ready sale. We believe this to be true in many instances. A miller has written to us inquiring if we did not think it would help sell a fair article of flour if the barrels were tastily painted—if a sufficiently higher price could not be obtained to pay the cost and trouble, etc. We really don't know, but think that it is quite possible that it might "take" with a considerable portion of the consuming public, and that the idea is probably a good one.

A recently-invented horizontal disk mill, the work of a Milwaukee inventor, will soon be on the market. The inventor says it is a "regular steel-millstone," and will do more and better work with less power than any grain-reducing machinery yet brought before the milling trade. We have seen some samples of work done by disk mills and they are undeniably excellent. Two mills in Kansas City are now being furnished with them. The disks are made at Ansonia. A company is being organized to push the manufacture and introduction of this invention, which seems to be one of great importance.

FLOUR MILL OWNERS—Please send us your address, with capacity of your mill in barrels per day of 24 hours, and also state whether you use steam or water-power, or both.

THE Baltimore Journal of Commerce says that the receiving and storage capacity of the grain elevators at Baltimore is as follows:

Elevators.	Proprietors.	Storage Capacity.
A .....	B. & O. R. R. Co.	500,000
B .....	B. & O. R. R. Co.	1,500,000
C .....	B. & O. R. R. Co.	1,800,000
D .....	B. & O. R. R. Co.	250,000
E .....	B. & O. R. R. Co.	500,000
F .....	B. & O. R. R. Co.	100,000
G .....	B. & O. R. R. Co.	750,000
Total 7 .....		5,400,000

\*Lately burned. To be rebuilt.

THE CASE MANUFACTURING Co., in their advertisement with us in this issue, inform the milling trade that they have been taking some first premiums, at both the St. Louis and Cincinnati Expositions, which is doubtless a source of gratification to them and warning that others must look to their laurels. In a recent note the CASE Co. inform us that their order book is well filled with orders for their rolls and purifiers, and add that their trade does not show any signs of dropping off, being continually in receipt of new orders from all sections of the country.

WE have received from MESSRS. POOLE & HUNT of Baltimore, Md., a very handsome catalogue, describing with numerous beautiful and original illustrations, the Poole & Hunt Leffel Turbine Water-wheel. Messrs. Poole & Hunt say:

"In getting up this pamphlet, we decided to make it as brief as possible, that readers may not be compelled to wade through a mass of (to them) uninteresting matter, in order to obtain the information they desire to possess. We have omitted all recommendations or certificates. A book might be filled with them alone, of recent date, but our Leffel Wheel is now so well known, that printed certificates are not necessary to advertise its merits. We submit copious illustrations, showing various applications of our wheel to a variety of purposes, all of which are in successful operation, and we feel sure these illustrations will plainly tell their own story, and not suffer when considered as examples of turbine engineering. The arrangement of turbines on horizontal shafts is not as generally understood as it should be. We have applied quite a number, with very satisfactory results, but more care and engineering experience should be used than is necessary with wheels on vertical shafts. When properly applied, horizontal wheels give equally good results, and by dispensing with the usual bevel gears, the power is applied by belting, as desired."

## A SENSIBLE RULING

The Postoffice Department has made the following decision, which meets the cordial approval of publishers of all reputable journals.

The liability of a party to pay for a newspaper must be determined by the rules applicable to other contracts. When a publisher, without request from a party, either expressed or implied, sends a paper, the mere fact that the party addressed takes the paper from the post-office, does not of itself create a liability to pay for it. It takes two to make a contract, and one party without the consent of the other cannot make him his debtor.

## MEETING OF THE PENNSYLVANIA MILLER'S ASSOCIATION.

The sixth annual Convention of the Pennsylvania Millers' State Association was called to order October 9, at Harrisburgh, in Y. M. C. A. hall by President Isenberg, who, in a short speech, congratulated those present as an earnest of their interest in the importance of their pursuit. Within the past twenty years the business of milling has developed proportions which now command as much attention from the great carrying corporations and in centres of commerce as any followed by man, and therefore it is very appropriate for those engaged in such a pursuit, to meet in convention to exchange thoughts and submit and discuss propositions for its management. In these brief words President Isenberg opened the regular proceedings of the convention. The present assemblage contains about seventy-five representatives from every part of the State and among the men of the very highest repute for skill and integrity in the pursuit in which they are engaged. No more dignified deliberative body, with higher objects in view, ever assembled in this city. The afternoon session was devoted entirely to the hearing of the reports of the Secretary and Treasurer, which were adopted, the latter showing the receipts and expendi-

tures for the past year being referred to the Auditing Committee.

The report of the committees being in order and a number of the members not having arrived yet, those present not being prepared to report, Mr. Miller moved that the reports of the committees be passed for the present and made the order for to-morrow morning's session, which was unanimously agreed to.

Mr. Garber moved that the expenses of the Executive Committee, when on special business of the association, be paid by the Association. Agreed to.

Mr. Small raised the question of responsibility of storing grain and the proper manner of receipting for the same, which was discussed by a number of the members, when, on motion of Mr. Wallower, a committee of six, consisting of Messrs. Small, Hoffer, Heebner, Walter, Eby and Hoffa, was appointed to investigate the subject and report at the next annual Convention.

Election of officers being next in order, and a sentiment prevailing to retain the old officers Mr. Wallower moved that the present officers B. F. Isenberg, President; Jacob Walter, First Vice President; Cyrus Hoffa, Second Vice President; and Landis Levan, Secretary, be re-elected and that Mr. Small be authorized to cast the ballot of the association. Unanimously agreed to, and the ballot ordered to be cast and recorded accordingly. The Convention then solved into a semi-experience meeting and the subject of burrs and rollers were discussed pro and con, some favoring one and some the other.

Mr. Garber thought the machine men will have the money and the millers the experience. Mr. McFeely said he did not want the association to sit down too hard on machinery men, he was here to defend himself, and advocated rolls for reducing wheat and burrs for middlings. His opinion was generally concurred in by all those using the roller system, but Mr. Garber thought the rolls would all be thrown out five years hence because people will die of dyspepsia. Adjourned to meet at 7:45 P. M.

## EVENING SESSION.

Meeting called to order at 8 o'clock. The president then introduced Mr. John D. Nolan, of Brooklyn, N. Y., who delivered a lecture on "What's New in Milling," which was well received. After the lecture, some discussion was indulged in, after which the convention adjourned to meet at 9 o'clock next morning.

## MORNING SESSION.

The convention reassembled at 9 o'clock. Mr. Ely, from the Committee on Insurance, reported that sufficient attention had been given the subject to enable them to make report as the insurance on mills was generally effected by the owners upon best terms afforded. He recommended the establishment of a mutual insurance company entirely in the grain and milling interest, which was well received by the association, a number of members expressing their approbation of the plan. A number of reports from the several committees were submitted, read, discussed and adopted.

A motion was adopted that the next annual convention of the association be held in Philadelphia. After some further mutual interchange of opinions and transacting some unimportant business the convention adjourned.

A number of samples of very fine wheat were on exhibition, the best of which was a sample of Tappahannock by W. W. Stryker, of Petersburg, Huntington County; a sample of Foltz by John P. Wakefield, of the same place; also one sample of same by Messrs. Small, York?

## QUICK TIME FROM THE FIELD TO THE OVEN.

The Democrat of Carrollton, Mo., says: "On Thursday 'Jim' Lawton invited 50 neighbors to see him beat his own time of two years ago, when his wife baked bread in eight and a quarter minutes after the wheat was standing in the field. At six minutes and ten seconds after four the Buckeye reaper stood at the corner of the growing wheat. Men were stationed every few feet along the line of grain ready to seize an armful as it fell from the reaper, and to rush with it to the thresher close by. The mill was just sixteen rods distant. At the drop of the hat the mules sprang to work, and in a minute and a half about a peck of threshed wheat was in the sack and on a horse that began a race for the mill. A minute and seventeen seconds later the flour was delivered to Mrs. Lawton and in 3 minutes and 55 seconds from the starting of the reaper the first griddle cake was eaten. In four minutes and 30 seconds from the starting of the reaper a pan of biscuits was passed out to the spectators."



## DESCRIPTION OF THE WATSON PLAN OF GRAIN ELEVATOR.

By WM. WATSON, Architect and Builder, 177 LaSalle Street, Chicago, Ill.

From foundation to top of roof, the Watson plan of Grain Elevator differs materially from all other plans, and can be adapted to any ground on which any other plan can be built.

After excavating the ground to the proper depth for the sinks, the entire surface is covered with eighteen inches, or more, of concrete. On this heavy footing course are laid, and the sink walls are carried up to within about four feet of the top of the ground. The main walls of the building, on heavy footing courses, are then put in, as shown by the drawing, and brought to the proper level to receive the foundation timbers for cribwork. When the nature of the ground requires it, piling is put in, which, being sawed off level, is covered with heavy planking to form a solid foundation for concrete and footing courses.

This construction of foundation lessens the liability of the building to settle unevenly, as when resting on piers. These walls average eleven feet from centers, each way of the building. The foundation timbers rest full length along these walls.

Upon these the cribwork commences, and is carried up to a height where the brackets are projected to support the timbers over the passage-ways. Hopper bottoms are put in the bins, each side of the sinks, as the work progresses.

When the timbers are placed over the passage-ways, bottoms are put in the bins which are supported by these. The walls of the bins are carried to the eaves of main roof, where the two outer walls on each side stop. The cross walls are continued, stepping off the slope of the roof. The middle walls are carried up a few feet higher, when the sills of the cupola are put in, running lengthwise the full length of the building.

The first story of the cupola is then raised. The walls of the cribwork are continued four to six feet above these sills. Bottoms made of the same material as the cribwork, placed on edge, run from the highest point of cribwork, and middle of building to top of inner wall of first row of bins. Openings are left in these bottoms, and cross walls so placed that the mouth of each and every bin is brought up to the mouth of the revolving spout; thus dispensing with every foot of spouting in the top of Elevator. The balance of the cupola is then finished. The tops of the bins have a tight flooring over them. Hopper scales are placed in a row through the middle of the building on the second floor, one on each side of Elevator Leg.

Under each scale hopper a heavy wrought-iron revolving spout is placed, reaching to round holes cut in the floor over the mouths of the bins, through which the grain passes directly into the bins. This revolving spout is so arranged that the weighman can raise it out of and set it into any of these holes without moving from his place on the upper floor, or spilling a single grain. A framework of heavy timber is placed in each sink, forming a support for the boxing that surrounds the Elevator Belt. This boxing extends to under side of timbers over passage-way, commences again on first floor of cupola, and extends to the top of building. This boxing is formed by inclosing the up and down belt of the Elevator Leg in the same space, instead of having a box for the up and one for the down belt, as usual. This prevents all possibility of the belt dragging on the front or back of the Leg.

In all elevators, two points must be provided for, viz: The settling of the cribwork, and the settling of the shafting and other machinery.

Having no trunking, no line shafting, but having an adjustable foundation to the engine and head of elevator, no other provision is necessary.

This is a point of great saving in cost of building. A small bin is provided between the upper and lower sections of the box in through which the Elevator Belt passes. No bracing at all in these Legs.

Instead of one large Engine with main driving belt and long line shafting in top of building, with necessary gearing to start or stop one or more Legs, one small Engine is placed at head of each Leg, and direct communication made with head pulley.

These Engines are set upon an adjustable foundation. The posts for the bridge-trees of the Elevator rest on the same foundation. Thus all machinery may be kept in line.

The Engines are under control of the weighman, who can start or stop them with-

The spaces for cars or wagons run lengthwise of the building. The floors of these passage ways are on a level with the car floor, with a space between sufficient for workmen to pass.

This open floorway, with no line of posts, full length of the house, greatly facilitates the shifting of the cars and the opening of the doors. The cross passage ways are floored on same level; these floors afford ample room for operating the house. Iron rods attached to the slide, covering the mouth of the bins, pass up through the floor near the walls. A ratchet holds the gate or slide. This house has been planned especially for the rapid and economical handling of grain.

An Elevator built on the Watson plan, occupying the same area on the ground, and having the

yield. The next improvement was to use a short scalping reel from four to five feet long clothed with No. 1 cloth, except eighteen inches No. 10 wire at the tail. The flour and middlings from the No. 1 cloth were sent to the reel as above, the bran came through the No. 10 wire and the shucks passed the tail and could be spouted separately or with the bran as desired, but good farmers soon learned that there was no nutriment in the shuck, and that it only acted as an irritant in the stomachs of the cattle. The reel for flouring was usually ten feet long, clothed according to the fancy of the miller with cloth ranging from No. 7 to No. 10, excepting about eighteen inches No. 4 at the tail for middlings. The best results with this or any other method

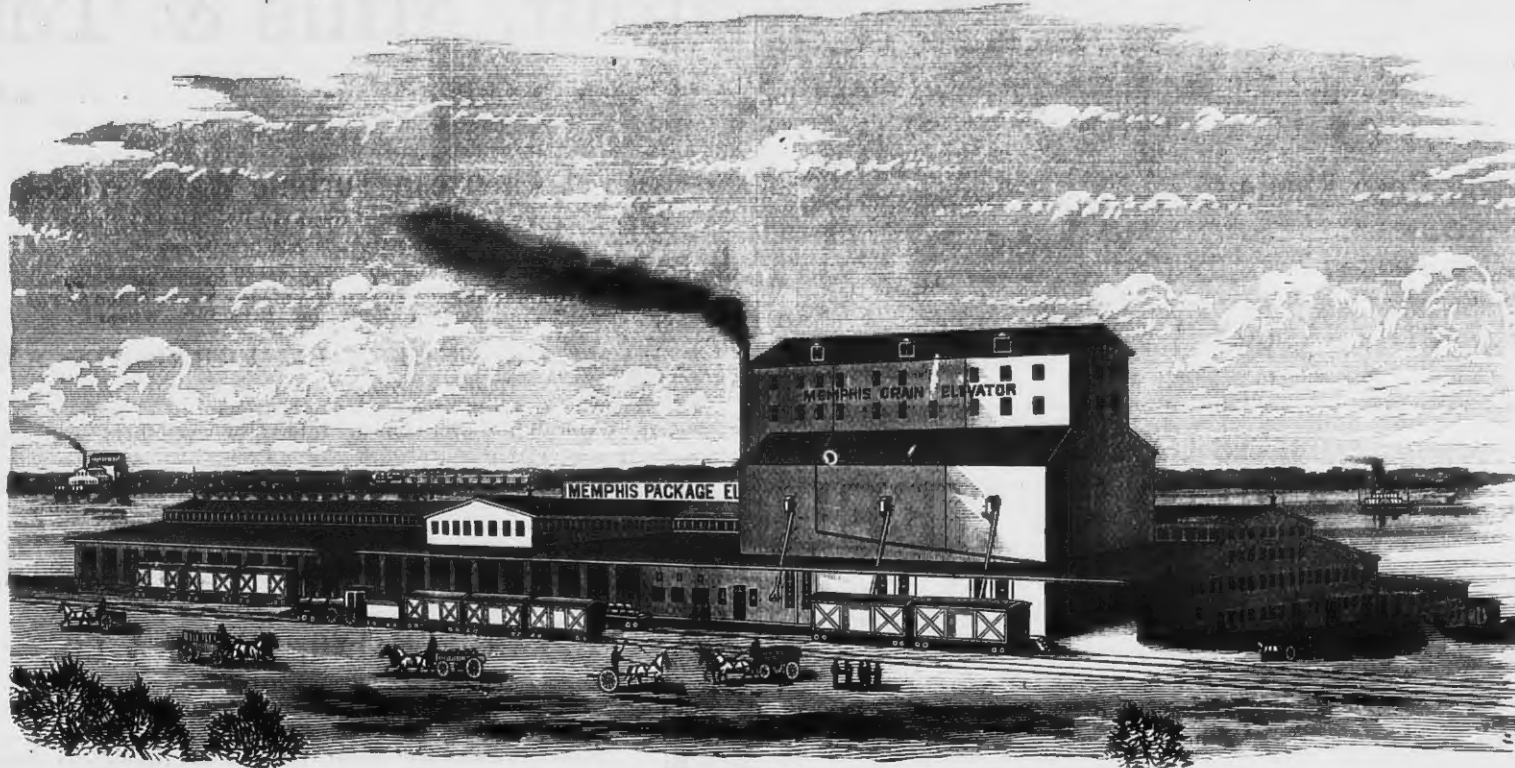
were obtained by putting the cloth entirely on the inside of the ribs, or from the outside of one rib to the inside of the next. They do not require anything to keep the cloth open, for a sharp, granular buckwheat flour bolts very freely. By this system a good flour can be made from well scoured but unshucked buckwheat, but it will be more or less specky and off color.

Many plans have been tried to get rid of these specks, the most noticeable was to grind high enough to just granulate the interior very little,

and pass the product to a reel graded from No. 5 to No. 00, subjecting each grade excepting No. 5 separately to a purifying by suction or blast, after which they are spouted together to the burrs for grinding, and bolted as before, but in this case it is better to grind somewhat closer so as to leave no good particles adhering to the yellow skin or bran. Some have tried purifying the fine middlings on purifiers with good results, but there is not the same advantage gained as there is in wheat middlings, as the specks are of about the same specific gravity as the middlings themselves.

The quality of burr best suited for buckwheat is a fine gritted, moderately but finely open old stock stone; the next best is a new stock, not too close. Most of the old stock are too sharp and cut the yellow skin or bran too much (and this is very tender and has a tendency to make the flour specky) by rasping the shuck when ground with it on, while the new stock is sometimes apt to glaze, especially when grinding damp or wet buckwheat. Damp buckwheat is one of the greatest troubles that the miller has to contend with, and he should be careful when purchasing to test it. Good, dry buckwheat will flour when rubbed on the floor under the foot, while damp will not, and as the buckwheat season is very short (generally ending with the year) and there being, so far as I know, no satisfactory means of drying it, the miller has nothing to do but make the best of it, select dry, cold weather to grind it, and when his burrs begin to hum raise them till they stop, and he will generally do as well as to keep fooling trying to make a yield.—(Thomas Wright, in the Millstone.)

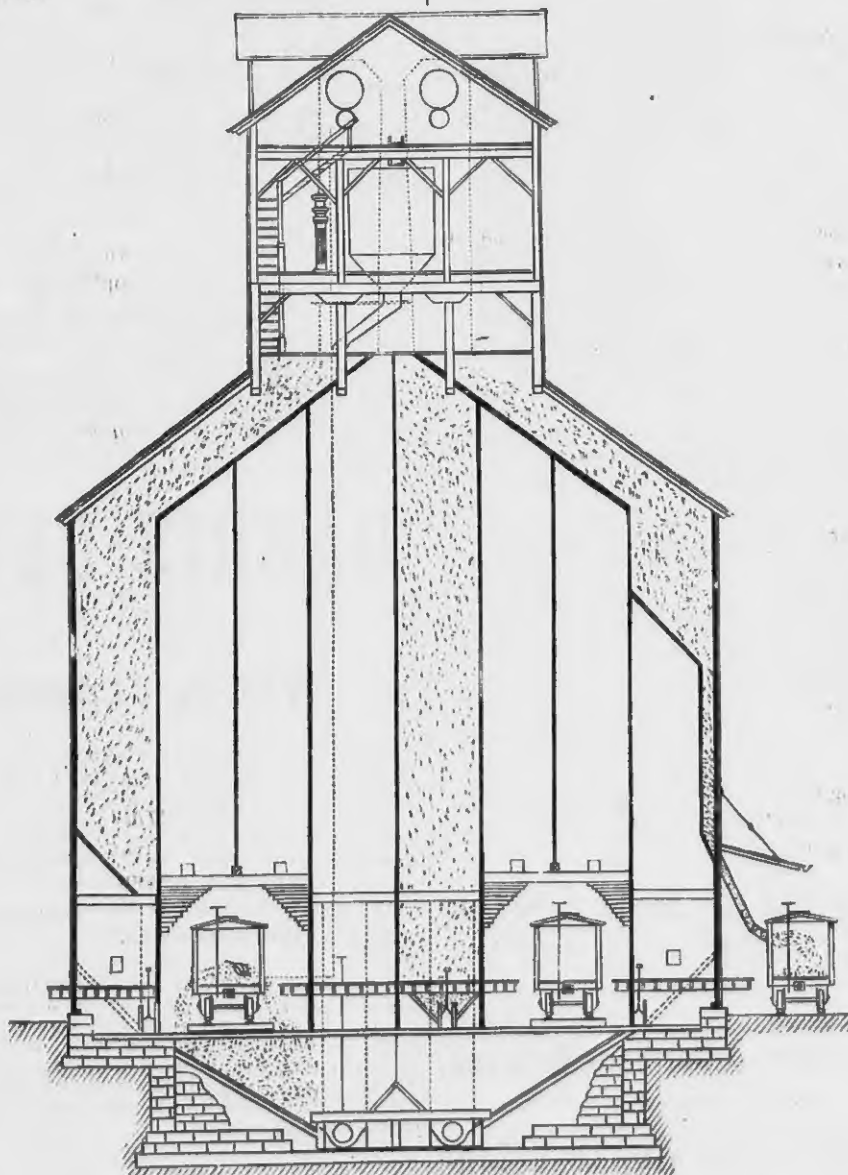
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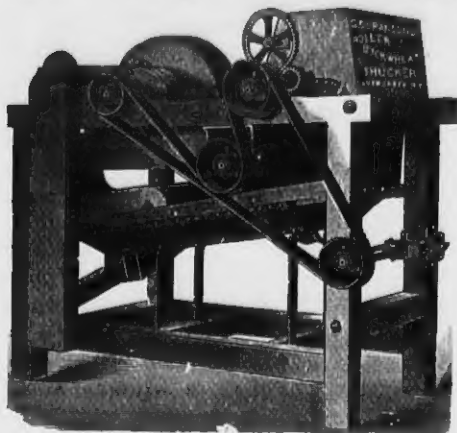
This drag-belt is driven at either end of building, from the head of Elevator.

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The old method of grinding was with the shuck on, grinding slow and low, so as to get all of the flour at one operation, consequently the flour often bore a strong resemblance to wood ashes, and sometimes felt something like soft soap; and when baked into cakes was as solid and indigestible as sole leather, but this was generally the work of the apprentice. The first improvement was to grind higher, take the middlings out through a piece of coarse cloth at the tail of the reel, regrind them and mix the flours. This enabled the miller to improve the color and preserve the



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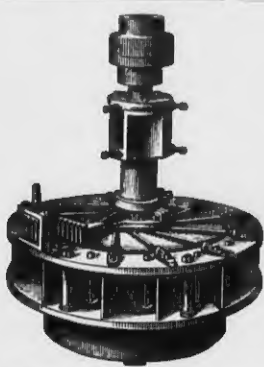
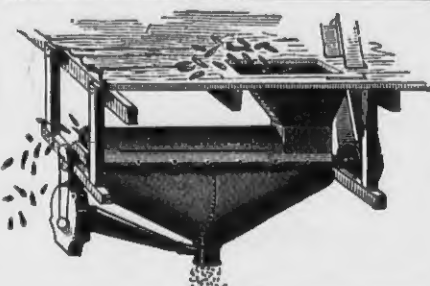
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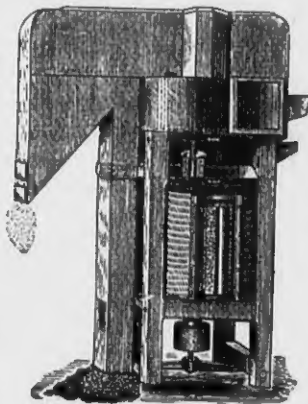
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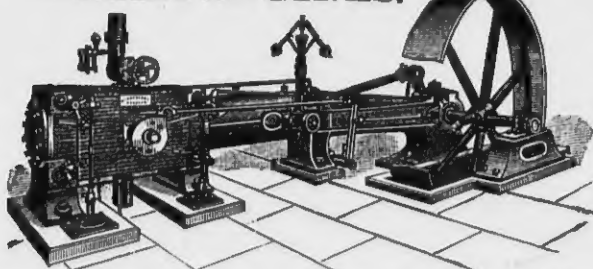


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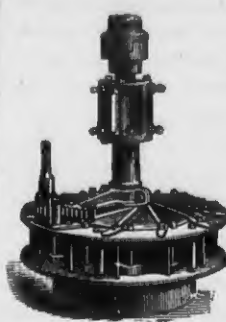
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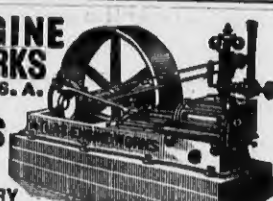
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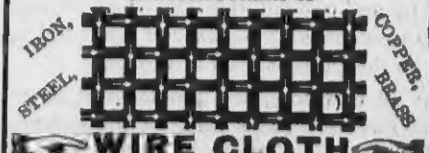
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## NOTE ON THE ACTION OF A SAMPLE OF MINERAL WOOL, USED AS A NON-CONDUCTOR AROUND PIPES.

[A paper by F. R. Hutton, School of Mines, New York City, read at the Philadelphia meeting of the American Society of Mechanical Engineers.]

The samples exhibited to the society were taken from the outside of a five-inch steam-pipe, which carries steam at an average of 40 pounds pressure per square inch.

The pipe is one of three which lie close together, and are surrounded with a casing of galvanized iron. Inside this casing was packed the mineral wool which has acted on the pipe as shown. The casing was made in bandages soldered together endwise and at the joints. The only outlets were at the intervals where hanger rods hooked into rings on the pipes to support them. Where the pipes passed through the open air, it was possible for atmospheric moisture (fog, rain or snow,) to enter within the casing by trickling down the hanger rods. Where the piping was under cover the moisture could only come from leakage at the joints, or it might have been conveyed as steam along the tight casing. But so tightly was the wool packed in many places that long travel was prevented.

The samples were taken from a part of the pipe which it had become necessary to un-sheath, where the run was under cover. Some are from the neighborhood of a flange joint where a rubber gasket had deteriorated and permitted a slight leakage. Others are from a length of pipe which enters an elbow, where the expansion of a long run of pipe is concentrated. The flexing of this joint has caused a leakage, or else the moisture has come from a buried pipe which leaked underground some time before opportunity arose to repair it. In either case the corrosion of the pipe seems to be the result of the action of mineral wool when affected by moisture and heat. The intensity of corrosion may be inferred from the fact that the threads of the pipe have been obliterated, partly by loss of top, no doubt, as well as by the filling of the roots. These cakes may be lifted by the thumb nail where large. Smaller flakes are broken off by expansion and contraction.

The mineral wool, when sheathed in this way, seems to change in mechanical character when permeated by moisture. This change will be shown to be one result of a chemical decomposition. When dry it remains a non-adherent, bulky and open mass all around the enveloped pipes. When it becomes wet—it holds a great deal of water—it becomes soggy, more compact, and falls away from the upper part of the sheathing, in some cases exposing the pipe. The saturation has been detected in one or two places by the deformation of the sheathing. Water may be squeezed out of the mass even after it appears dry.

To supplement the subject is exhibited a piece of 2½-inch pipe, which has been buried in mineral wool packed into a brick tunnel open at the ends. The top of the tunnel was flat, made of blue stone flags laid in cement, and covered all over with cement. Whatever moisture got into the tunnel should have evaporated outwards at the ends; but some did not, and has acted to corrode the pipe to great thinness on the lower side, and it was ultimately blown through at about the middle of its length. This pipe as well as the five-inch pipe from which the scales were taken, were laid new and sheathed in the fall of 1879; they are, therefore, not quite two and a half years old. I have just dug up a 3-inch pipe laid in the summer of 1874 in earth which is not particularly dry. It is as good and strong as ever, and has had just the same work to do as the sample shown. Both were return pipes from steam-heating systems, carrying condensed steam back to the boilers.

It has, therefore, become necessary to look for the cause of this rapid corrosion. The mineral wool is made by disintegrating blast-furnace slag by a jet of steam or air. The wool must, therefore, contain whatever constituents were in the slag, and will be as diverse as different samples as the charges in different blast furnaces. But the general composition must be a compound of silica with bases, usually lime, magnesia, etc. It may be expected, therefore, that some characteristics of one sample of such silicates, when it becomes wet, may be taken as likely to hold for all. It is a known fact that these silicates, under heat and moisture, will decompose into the hydrated silicic acid, or gelatinous silica, according to the chemical formula below (taking lime as probable base):



The CaO is caustic lime, which mere dampness will slack, and cause to attack any iron surface; or if that reaction does not satisfy,

it may be suggested that the decomposition of the wool sets free oxygen in what the chemists call a nascent state, in which state it will assault the iron as likely as the lime. But the specimen which I took and exposed to a few simple qualitative tests gave a strong reaction for hydrosulphuric acid—the characteristic acid of corroded eggs. The element sulphur is not at all an unusual one in slags. It may be present as combined in a sulphide, or in a hyposulphite, probably with lime as a base. In either case moisture and heat would release sulphur as an oxidizing agent, which would be only too likely to fasten on the iron. Qualitative tests have shown the unmistakable presence of sulphur in solutions of scale taken from the pipe, thus proving that corrosion must have been more active than that due to an innocuous non-conductor, even though wet.

Where the wool has remained entirely dry, the pipes are as good as new. The white stencil of the tube works is as legible as ever at such points. The inside of the sample shown is free as ever from oxide, but where moisture is to be expected on the outside of pipes—as it must be in expanding and contracting runs of long pipe—it would seem necessary for the engineer to be very certain of the absence from his non-conductor, of such an agent as has been determined in this particular case, and to have his silicate in a form which will not decompose. The action would seem to be no less decided than in the cases where unleached ashes have been similarly used. The experience is, therefore, put at the service of the society for the protection of its members against similar mishaps.

## DISCUSSION.

Mr. Kent:—I think this is an exceedingly valuable paper. It will not only prevent us from using mineral wool in its present conditions, but it will teach mineral-wool men to purify their products from deleterious elements. I must disagree however, with the gentleman in regard to part of the chemical theory, the first part and the second part. As to the third part I partially agree with him. I think it is exceedingly unlikely that there is any decomposition of silicic acid or any other earth. It is also extremely unlikely that caustic lime can be formed. It is also unlikely that oxide of calcium, if formed, would oxidize the pipe. The trouble is that the mineral wool lets in, some how or other, sulphurous acid gas. If you have a freshly made sample of this mineral wool, you smell it. You have present then sulphurous acid gas and sulphide of calcium. You may have sulphide of sodium and sulphide of potassium. You have free sulphurous gas. You will not have sulphuretted hydrogen at all, except by some subsequent decomposition. Sulphuretted hydrogen could not exist at a fusing heat. The chemical reaction that takes place is the oxidation of sulphurous acid into sulphuric acid by the oxygen of the water and air, especially in the presence of oxide of iron, or even of free iron. I have made a synthesis to prove that sulphurous gas added to water, and that to iron, will oxidize it with tremendous rapidity, forming sulphate of iron, which will dissolve in impure water the same as this gentleman has found; the water solution of this iron will show sulphuric acid. You will find that recorded in the *Journal of the Franklin Institute* for 1875, in connection with the destruction of bridges due to the presence of sulphurous acid in the smoke from the coal burned on locomotives.

Professor Thurston:—I would like to ask Professor Hutton if it is proved that caustic lime will produce corrosion?

Professor Hutton:—I perhaps ought not to say proved. The hypothesis has been advanced that external corrosion of boilers set in lime mortar is the result of calcination of that lime. I have taken that hypothesis for all that it is worth, and simply reproduce it in that form. I have no exact knowledge, no direct experiments to report on this subject.

Professor Thurston:—I asked the question because I have been accustomed to keep caustic lime in my cases with my iron to protect it from corrosion, and my object was, not to secure the absorption of moisture, but to secure the absorption of the carbonic acid that might be present. I did not suppose that moisture would do any harm.

Mr. Woodbury:—Is not the rusting of iron by mortar somewhat dependent on heat? We have wire lathing which does not rust, and in the blowers of mills where the nails run through there is no rust, but plaster of Paris will, of course, rust iron very rapidly.

Professor Thurston:—I presume that the mortar is never in perfect contact with the iron where corrosion occurs. There is a crack

which holds the moisture, and that may lead to decomposition. I think Professor Calvert's experiments will throw a good deal of interesting light on the matter. He investigated the reaction between oxidizable metals and gases, and as I remember now, he never found oxidation occur at all where carbonic acid was not present. My theory has been in using caustic lime to prevent corrosion, as I say, that it should take up the carbonic acid; as long as it is purely caustic it will take up the moisture. After it is slaked it will do that no longer.

Professor Hutton:—My impression is, though, Mr. President, that the point as to the decomposition of silicates under heat and moisture, is a patent fact, although I cannot myself give references to this subject. I have been told so. When this matter was brought to my mind, I at once went to Professor Eggleston, our professor of metallurgy at the School of Mines, and from him that statement of the decomposition of silicates comes. My own theory was the sulphate theory; I know by experiment that, that is correct. This other theory is also advanced, but not directly upon my own authority and my own experiments, on which the discussion rests.

Professor Thurston:—As to the fact of corrosion there is, however, no doubt.

Professor Hutton:—There is no doubt about that.

Professor Thurston:—This reminds me of an interesting fact in connection with this paper. One of our members who had a very long experience in marine work, has been trying to get a non-conducting material for the protection of his boilers. I talked with him one day about some boilers he put in some of the Sound boats. He said he had given up there the use of hair felt. He found that where he used it corrosion was accelerated on the inside of the boiler. So seriously did it occur, especially about the steam-chimneys, that he gave it up. He attributed it to hair felt, and he satisfied himself by taking off hair felt and replacing it with asbestos and other material, and shifting the position until he made up his mind that hair felt did that.

Mr. Barr:—Did he say what particular kind of corrosion?

Professor Thurston:—I do not remember that he did. It thinned his boilers very considerably under these sheets of hair felting, but he said it was so serious that he had given up the use of it.

Mr. Barr:—I wonder if he ever saw a steam ship boiler that was not corroded in that way, whether hair-felting was used or not?

The President:—He is a man who I do not think would be mistaken on the subject, as he has a very great experience.

Mr. Partridge:—It has been repeatedly stated that ordinary glass under the influence of heat and moisture is decomposed. It is certain that certain kinds of glass are easily corroded by moisture, though the process is a somewhat slow one. Old bottle-glass buried in the soil for a comparatively short time will show signs of corrosion, not unlike that of the ancient Greek glass in the Censola collection, in the Metropolitan museum. Though this action has not been very closely studied, the resulting surfaces are precisely similar to those obtained by the use of hydrofluoric acid in producing iridescent glass. Why should not a similar decomposition take place with an imperfectly formed glass-like mineral wool, in which there is likely to be a large excess of some of its constituents, especially those sensitive to the action of heat and moisture?

Professor Eggleston:—The paper which Mr. Hutton has just read is one of much interest, as blast-furnace wool is being used on a very large scale as a non-conductor. This is not the place to discuss the characteristics of blast-furnace slag, but a knowledge of a few of them is necessary in order to fully understand how it is likely to be affected. Blast-furnace slag from which the wool is made is not a material of constant composition; it varies not only in different districts, but with the same furnace under varying conditions. It is the only means by which the sulphur remaining in the ore can be removed in any appreciable quantity, and in furnaces running upon sulphurous ores the slag is made of such a composition as will contain as much as possible of the sulphur contained in the ore. While the slags are variable so far as their ultimate chemical composition is concerned, there are a few characteristics in which they are all alike; one of these is that they gelatinize with acids. It has been supposed until within a few years that silicates were not usually attacked except by the mineral acids; it is, however, known now that not only are other silicates attacked,

but that all these silicates, forming blast-furnace slag, are attacked with great ease by organic and other acids, such as would be likely to be found in the ground. The sulphur, as will be seen in the analysis below, is in the slag mostly as a sulphide, probably of calcium.

## ANALYSIS OF BLAST-FURNACE WOOL REMOVED FROM PIPES AT COLUMBIA COLLEGE.

Water .....	1.08
Potash .....	0.19
Soda .....	1.75
Magnesia .....	19.82
Lime .....	26.56
Sesquioxide of Iron .....	0.64
Alumina .....	7.84
Sulphur .....	2.46
Silica .....	38.97
<hr/>	
	99.31

## SOLUBLE IN WATER.

Water .....	1.08
Potash .....	0.19
Soda .....	1.75
Magnesia .....	0.12
Lime .....	1.61
Sulphur .....	0.23

## INSOLUBLE IN WATER.

Magnesia .....	19.70
Lime .....	24.95
Sesquioxide of Iron .....	0.64
Alumina .....	7.84
Silica .....	38.97
Sulphur .....	2.23

## ANALYSIS OF SCALE FROM PIPE.

Protoxide of Iron .....	3.98
Sesquioxide of Iron .....	81.51
Sulphuric acid .....	3.75
Water .....	4.38
Lime .....	3.09
Magnesia .....	1.07
Silica .....	2.46
<hr/>	
	100.24

After the slag has been exposed for some time to moisture the sulphur is transformed into sulphuric acid, attacking the iron or whatever other material there may be for it to attack. Moisture, simply leaching through the slag would absorb sulphuric acid enough to give a decided reaction and to attack the iron. I have given above the composition of the wool as used around the pipes, the parts which are soluble and those which are insoluble in water before any action on the pipes commenced.

I have also given the analysis of the scale which was removed from the pipes, which shows that the action of corrosion on the iron was that of sulphuric acid. The slag transformed into wool does not differ at all from the slag in its solid form, except in the fact that it is capable of retaining a very large amount of air. To this and this alone is its non-conductive power due. It is, moreover, in this state much more easily attacked by any decomposing agent than when solid.

If this slag becomes packed in any way it loses a considerable portion of its non-conducting power, and if it becomes moist it loses still more and is very likely to pack and become worthless. Heat and moisture will decompose the slag. The slag may become decomposed with the separation of gelatinous silica; and when heated, even slightly, in this condition, would certainly attack the iron, not only as ordinary water attacks iron, but because it contains sulphates leached out. Now, if in addition to this, the pipes are buried in such a way that they receive the superficial drainage, that exerts another more powerful action, for not only will the slag be attacked by the moisture, but the organic acids will further attack the slag and decompose it, rendering it entirely unfit for the purposes for which it is used. So long as the wool is kept dry and is not allowed to pack, there probably is no other substance that is as good for the purpose. The moment, however, that it becomes moist it is certain that the material then becomes dangerous to the pipes it covers. Those of us who are metallurgists have known of these facts for a long time. I made allusion to some of them in the Hartford meeting, when Mr. Emery announced his extremely interesting experiments on the conductivity of heat through various substances.

One thing must be understood from the accident which Mr. Hutton describes, that whatever blast-furnace wool is to be employed absolute freedom from moisture must be insured.

There are thus several inconveniences in the use of this material:

1°. If it becomes packed it loses its conductive power.

2°. If it becomes moist it sags together, becomes packed, and is worthless.

3°. If the moisture is at all constant there will be a decomposition of the slag, and an attack on the iron by the sulphuric acid set free, or the organic acid if the material comes from the drainage of the soil.

It becomes, therefore, a matter of very great importance to engineers using this material that they should prevent any of these different things from occurring; and then the material is one of the most valuable non-conducting substances known.





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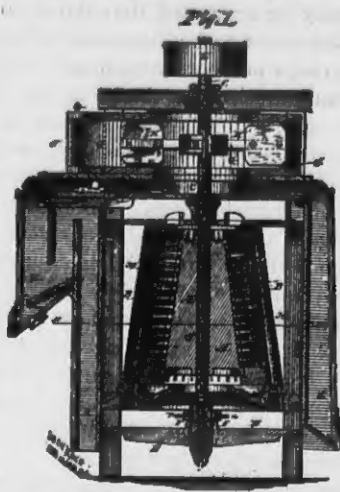
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Milwaukee Dust Collector Mfg. Co.  
GENTLEMEN—In reply to your request for our opinion of the merits of your Dust Collector, will say, we are using them on twenty purifiers and they ventilate perfectly and require no attention. We consider it the best Dust Collector in the market.  
Yours truly,  
J. A. CHRISTIAN & CO.

MINNEAPOLIS, MINN., April 2, 1883.

Milwaukee Dust Collector Mfg. Co.  
GENTLEMEN—Yours of 30th ult. at hand. We say in reply, that we have six of your Prinz Dust Collectors in our mill, and they are giving best of satisfaction, doing all that you claim for them. We consider them the best Dust Collector in the market.  
Yours truly,  
D. K. BARBER & SON.

MINNEAPOLIS, MINN., April 2, 1883.

Milwaukee Dust Collector Mfg. Co.  
GENTLEMEN—After a two months' trial of your Dust Collector, we feel prepared to bear testimony to the value of your machine, and will say, without exception, it is one of the most satisfactory devices we have ever placed in our mill as a purifier and roller exhaust.  
Yours truly,  
CROCKER, FISK & CO.

MINNEAPOLIS, MINN., April 2, 1883.

Milwaukee Dust Collector Mfg. Co.  
GENTLEMEN—In reply to yours of the 14th ult., would say that the Prinz Dust Collector in use in our A and B mills are giving excellent satisfaction, need very little attention, and do their work remarkably well.  
Yours very truly,  
MOSELY & MOTLEY.

ROCHESTER, N. Y., April 17, 1883.

Milwaukee Dust Collector Mfg. Co.  
GENTLEMEN—Yours of date, Feb. 24, received, making inquiry as to how your Dust Collectors are working, would say they are giving us entire satisfaction. We are running twenty of them. They give us no trouble.  
Yours truly,  
KEHLOR MILLING CO.

St. Louis, Mo., March 7, 1883.

Milwaukee Dust Collector Mfg. Co.  
GENTLEMEN—I have the Dust Collector that you shipped to D. H. Grandin, of this city, at work, and will tell you in this just what I think of it. I consider it the most perfect working machine that I ever saw; it has dispensed with the dirty dust room entirely. It takes the dust from four purifiers completely, and from nine sets of single roller mills to a perfection. I cannot say enough in its praise, and feel sure that it has a future unequalled by any mill improvement of the age. I remain very respectfully yours,  
J. PHETIPLACE.

JAMESTOWN, N. Y., April 27, 1883.

MILWAUKEE DUST COLLECTOR MFG CO., Milwaukee, Wis., U. S. A.

Please mention the United States Miller when you write to us.



A MICHIGAN miller writes us as follows:

"We notice that an effort is being made to stop the publication of trade notes in milling papers. I assure you that there is no matter in milling journals that is read with more interest than these trade notes. Every miller is desirous of knowing who is making improvements and what the nature of those improvements are. A miller contemplating making changes will read these 'trade notes,' and is often governed in his purchases by them. He sees that some miller in whom he has confidence has ordered certain machinery and concludes to order similar machines, and is often thereby influenced to make changes which he would not have thought of if not suggested by the trade notes, the result of which will be to his advantage as well as to that of the millwright, manufacturer and mill-furnisher. I vote for the publication of plenty of 'trade notes.'"

#### AN ENGLISH GRADUAL REDUCTION MILL.

British millers, although rather slow about coming to conclusions about adopting new methods and machinery, when they do finally make progress make it in earnest. During the past two or three years many most excellent mills have been erected in Great Britain. One of the latest complete gradual reduction mills has recently been built for F. Mors, Esq., of Salford. It has a capacity of 900 sacks per week. *The Miller* (London) has recently published an illustrated description of it. The system employed is known as the "CARTER CONTROLLABLE AUTOMATIC SYSTEM." After the wheat is cleaned (by EREKA machines, built by Howes & Ewell, of Silver Creek, N. Y.,) it passes into a bin over the first break roll. There is a row of five break rolls and eight smooth rolls. After the first break the wheat passes into one of the scalpers; the overfalls of this scalper pass into the second break roll and so on to the last. The overfalls of this machine pass through the bran-duster and thence to the bran sack. Most of the siftings of these scalpers unite and enter a reel which takes out the flour and fine middlings and sizes the coarse middlings (semolina). The flour and middlings then pass into another reel which removes the flour and the middlings fall over and then go to be dusted and sized. The various sizes pass over various purifiers and from thence to the smooth rolls. The coarse semolina and middlings are lightly crushed and dressed through centrifugals and the overfalls of the dressing machines are redusted and re-purified, and yield some of the best middlings. The germ comes away flattened and is sacked by itself and finds a ready market (presumably to the manufacturers of the much advertised "Health Food," "Infants' Food," etc.). Middling of various qualities and sizes from purifiers and dressing machines drop into the set of worms by numerous spouts. There is a worm for every smooth roll and into some of them middlings meet from various sources. The break rolls, smooth rolls and purifiers are all provided with automatic feeders. It is said that by actual test the same amount of power will produce one-third more flour with the full-roller process than with mill-stones.

#### BILL ARP TALKS OF BOYS AND TRADES.

I believe in these schools where boys can learn trades. Peter the Great quit his throne and went off to learn how to build a ship, and he learned from stem to stern, from hull to mast, and that was the beginning of his greatness. I know a young man who was poor and smart and a friend sent him to one of these schools up North and he stayed two years and came back as a mining engineer and a bridge builder and last year he planned and built a cotton factory and is getting a large salary. How many college boys are there in Georgia who can tell what kind of native timber will bear the heaviest burdens or why you take white oak for one part of a wagon and ash for another, or what timber will last longest under water and what out of the water. How many know sand stone from lime stone or iron from manganese? How many know how to cut a rafter or a brace without a pattern? How many know which turns the fastest the top of the wheel or the bottom as the wagon moves along the ground? How many know how steel is made, and how a snake can climb a tree?

How many know that a horse gets up before and the cow gets up behind, and the cow eats grass from her and the horse eats to him? How many know that a surveyor's mark upon a tree never gets any higher from the ground, or what tree bears fruit without bloom?

There is a power of comfort in knowledge, but a boy is not going to get it unless he wants it and wants it bad, and that is the trouble with most college boys, they don't want it. They are too busy and haven't got time. There is more hope of a dull boy who wants

knowledge, than of a genius, for a genius generally knows it all without study. These close observers are the world's benefactors.—*Bill Arp in Atlanta Constitution.*

#### HIS OWN MONUMENT AND EPITAPH.

[From the Ogdensburg Journal.]

A gentleman from this city who has just returned from a visit to Vermont, in visiting a cemetery at Cavendish, Windsor County, saw a monument of recent date. The person who erected it, and for whom it stands in memory, still lives, although he has had his funeral sermon, taking his place in the church in front of the mourners. He has now his coffin ready in the house, to receive his body as soon as life is ended. It is inscribed:

"Thou I am dead, yet speaketh. For here is rest"  
"Upon the millstone top  
I set the noble block  
To let the world know what  
I have done; it is ever  
Been my heart's desire  
To do unto you as I would  
That ye should do unto me.  
So cast the beam out of your own eye  
And let me rest in peace.  
And sing my redeemed love.  
Come my sweet companion,  
Meet me here."

He being a miller, took one of the millstones for a base for his monument. Since the erection of the monument his "sweet companion" has died.

#### THE LARGEST GRAIN SEPARATOR IN THE WORLD.

At the Genesee Flour Mills, on Gold Street, San Francisco, may be seen what is probably the largest grain separator ever built in the United States, and supposed to be the largest in the world. It is being constructed by George Summerton, foreman of the mill, for Flood & O'Brien's large granaries at Port Costa, where it will be in operation by the middle of September. The capacity of the separator is guaranteed to be 200 tons an hour. The engine, which will be of the latest pattern, is being built in this city. The separator itself is twelve feet long and ten feet high, and will be placed on the third floor of a building thirty-two feet square and seventy-five feet high. It has twelve adjustable sieves, six on each side, and four blast fans, which are driven by the eccentric shaft and make 600 revolutions per minute. The shaker plates are driven by an adjustable eccentric, and the shaker frames are suspended by plate steel springs, which moves the frames 600 times a minute. If the grain elevator feeds the separator too fast the surplus grain is led off by a spout which carries the grain back to the elevator, and it is then lifted again and replaced in the separator. There are three full sets of sieves, which can be placed in or removed from the separator in a few minutes to accommodate the different kinds of grain. The feed-spout is adjustable, and feeds the whole length of the sieves, which have an end motion. The grain goes from the separator into two large bins, from which it is drawn by a number of spouts. The foot of the grain elevator is placed in a bin ten feet below the lower floor, and the bin is grated over with iron rods to prevent accidents. The elevator buckets are eighteen inches long and six inches deep, and travel at the rate of 300 feet a minute.

It is estimated that the separator, elevators, engines, and the building in which they will be placed, will cost \$25,000.—*San Francisco Chronicle.*

#### FOR LOVE OF A LITTLE CHILD.

A Cincinnati paper says: In a pottery factory here there is a workman who had one small invalid child at home. He wrought at his trade with exemplary fidelity, being always in the shop with the opening of the day. He managed, however, to bear each evening to the bedside of his "wee lad," as he called him, a flower, a bit of ribbon, or a fragment of crimson glass—indeed anything that would lie out on the white counterpane, and give a color to the room. He was a quiet, unsentimental man, but never went home at night without something that would make the wan face light up with joy at his return. He never said to a living soul that he loved that boy so much. Still he went on patiently loving him, and by and by he moved that whole shop into positively real but unconscious fellowship with him. The workmen made curious little jars and cups upon their wheels, and painted diminutive pictures down their sides before they stuck them in the corner of the kiln at burning time. One brought some fruit in the bulge of his apron, and another engravings in a rude scrap-book. Not one of them whispered a word, for this solemn thing was not to be talk about. They put them in the old man's hat, where he found them; he under-

stood all about it, and, believe it or not, cynics, as you will, but it is a fact that the entire pottery full of men, of rather coarse fibre by nature, grew quiet as the months drifted, becoming gentle and kind, and some dropped swearing as the weary look on the patient fellow-worker's face told them beyond mistake that the inevitable shadow was drawing nearer. Every day now some one did a piece of work for him and put it on the sanded plank to dry, so that he could come later and go earlier. So when the bell tolled, and the little coffin came out of the lowly door, right around the corner, out of sight, there stood one hundred stalwart workingmen from the pottery with their clean clothes on, most of whom gave a half day's time for the privilege of taking part in the simple procession, and following to the grave that small burden of a child which probably no one of them had ever seen.

#### MILLERS' NATIONAL ASSOCIATION MATTERS.

The Sub-Executive Committee of the Millers' National Association met at Minneapolis on Monday, October 8, and in an informal way discussed all matters of interest pertaining to the Millers' National Association. There were no new developments in patent matters.

Some details were discussed in regard to the winding up of the Denchfield case, in connection with the proper disposition of such costs as were likely to be collected from the plaintiffs.

In conformity with a resolution, passed at the last annual convention, the president appointed a committee on transportation and marine insurance, consisting of C. H. Seybt, chairman, John T. Ames, of Northfield, and Wm. Sanderson, of Milwaukee. The scope of this committee's work will be to investigate all matters pertaining to transportation, both inland and foreign, to ascertain what defects exist in the present forms of bills of lading and such other matters connected therewith, as may in its judgment require changing and to entertain all matters of complaint in connection therewith, and report what action, if any, is necessary, or advisable to be taken by the association at the annual convention.

The present method of marine insurance were also fully discussed, and the committee was instructed to embody this matter in its report.

The bran-compressor was talked up and the committee is of the impression that before the expiration of the time set, viz., January 31, 1894, a successful machine will have been produced answering all of the requirements named in the offer made at the Cleveland Convention.

The secretary was instructed to issue a circular letter to inventors informing them under what conditions their respective inventions will be tested by the committee and giving them such other information as in his judgment may be necessary.

#### ITEMS OF INTEREST.

HOW TO PRESERVE FENCE POSTS OR OTHER LUMBER IN THE GROUND.—A writer in an exchange says: I discovered many years ago that wood could be made to last longer than iron in the ground, but though the process so simple that it was not well to make a stir about it. I would as soon have poplar, basswood or ash as any other kind of timber for fence posts. I have taken out basswood posts after having been set seven years, that were as sound when taken out as when first put in the ground. Time and weather seemed to have no effect on them. The posts can be prepared for less than 2c. apiece. This is the receipt: Take boiled linseed oil and stir in pulverized coal to the consistency of paint. Put a coat of this over the timber, and there is not a man that will live to see it rot.

The ignorance of some people about some things is often strikingly and comically illustrated. I am reminded of this by a story told by a Mr. Davis, a stove dealer in Northern Texas, who trades with a big stove house on North Main street. Mr. Davis said that about two years ago a big countryman came into his store and bought a cooking stove. A few days later, when the store was full of customers, the big countryman drove up and hitched his ox team to the horse rack, came to the front door and bawled out that his stove "would not work" and that he had brought it back. Mr. Davis, rather mortified at the fellow's unfavorable expressions, asked what was the matter with it, and wound up the question with the statement that he had never before heard any one complain about the stoves. "Why there ain't no hole for the smoke to go out, and you can't get it hot

enough on the top to dry spit," was the appalling answer. Mr. Davis suspicioned right away that the fellow didn't know how it ought to "work," and on opening the stove his suspicion was fully confirmed. The fellow had been starting fires in the oven and trying to cook his meals in the fire box, as he himself innocently confessed when asked.

THE GRINDSTONE.—Mr. J. E. Mitchell in the *Journal of the Franklin Institute*, says, about the grindstone:

"All nations use it, and it is perhaps with all the one piece of mechanism that bears the same form and is the same in principle. More or less directly it takes part in the greatest modern material enterprises; it has no doubt assisted to fashion the implements of many of the lost arts, and is still needed in many of the requirements of the arts of the present day.

A CAVITY in a grindstone may be repaired as follows: Take a piece of old grindstone and pound it up quite fine, or procure some fine, sharp sand and sift out the coarsest, using only the fine; make this into a paste with one-third the bulk of hydraulic lime or cement and sufficient water glass; undercut the cavity in the grindstone or drill keyholes in it, and fill it with the cement as above made. It will harden very rapidly. Very good artificial stones may be made in this manner in a mould to which considerable pressure can be applied.

A CHEAP LIGHTNING-ROD.—A person who was entrusted with the matter of equipping a church with lightning-rods consulted a number of electricians upon the subject, and as the result of a number of opinions from experts, he used a lightning-rod made of round iron three-quarters of an inch in diameter, and welded at each joint. The upper end of the rod was drawn to a point, and care was taken to provide a good ground connection with damp earth at the lower point. The rod was secured to the church by galvanized-iron staples.

The whole length of the rod was 192 feet, and the cost \$14.80, or seven and three-quarters cents per foot.

The rod conducted away a charge of electricity during a thunder storm, without any damage to the church.

At the conclusion of a grand day's hunt out West, not long ago, the tired and happy hunters gathered around the banqueting table in the evening and ate and drank to their hearts' content. A poet who was present on that occasion describes a part of it as follows:

They set the barrel on one end,  
And stove the other in;  
They used for taster to attend  
A ladle made of tin.

The whisky, made by honest men  
Was drunk by men upright,  
And none would deem it hurtful then  
To drink on such a night.

Then every man drank what he choose,  
And all were men of spunk;  
But not a fighting wrangle rose,  
And not a man got drunk.

HOW TO TEST MACHINE OILS.—A good plan to test a lubricating oil is to take several kinds of the same article, one of which, being well known, may serve as a standard, and to place single drops of each in a line across the end of a piece of plate-glass about 24 inches long, one end being 6 or 8 inches higher than the other, to form an inclined plane. The drops of oil run down this smooth plane in a race with each other. The quality of the oils for lubricating purposes is shown by the distance traveled and the trace left by the drops. Thus, on the first day, sperm oil will be found in the rear but it will in time overtake the rear, and retain its power of motion after most other oils have dried up. A light-bodied oil flows quickly, like water, but also dries quickly, whereas what is needed is a good body combined with a limpid flow. Many oils have a good body, but have a tendency to gum, and this will be distinctly shown upon the glass. It is scarcely necessary to remark that the test slip should be covered from dust while the experiment is being made. The above method will show the physical qualities of different descriptions of oil, but if the presence of acid is to be detected, another simple device may be adopted. In a sheet of bright copper a number of shallow pits are made by the blow of a round-faced hammer. Samples of oil left some days in these dishes on a shelf in a warm room will show, by the formation of verdigris, where acid is present. The existence of a blue tinge of fluorescence in a glass phial of oil is frequently assumed to indicate the presence of mineral oil, but this is an illusory test, since the same effect is frequently observed in the purest and freshest vegetable oils.



## THE MARTIN

## Improved Centrifugal Flour Dressing Reel!

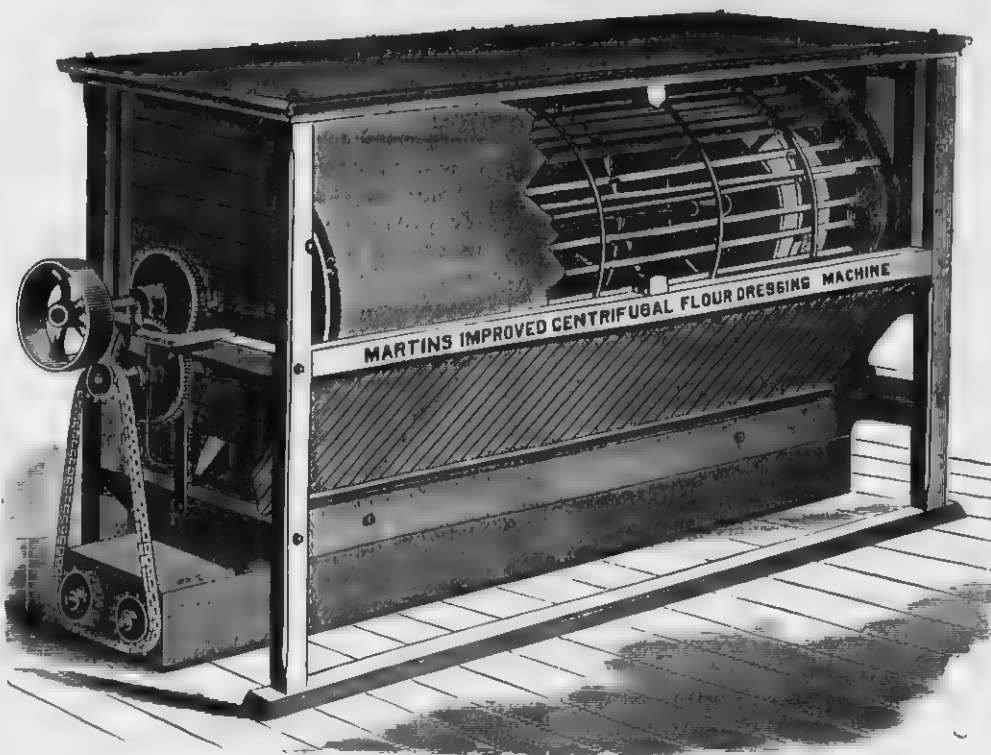
Over 1,000 in Use!

Largest Capacity,

Best Results,

Lightest Running,

Least Wear of Silk.



Over 1,000 in Use!

Our New Double Conveyors,

New Cloth Fixing and  
Stretching Device,New and Improved  
Manner of Driving,  
Are Special Features of the  
Greatest Importance.

**THE MARTIN CENTRIFUGAL** has more than **FOUR TIMES** the capacity of the ordinary reel, and will make clear flour and a clean finish on stock that cannot be treated in the common reel without loss, no matter how much silk it is passed over.

**IT IS ESPECIALLY ADAPTED** to handling soft, re-ground material, full of light impurities, whether from rolls or stone.

**IT IS VASTLY SUPERIOR** to the common reel or dusting middlings.

**IT IS INDISPENSABLE** to a **CLOSE FINISH** in any system of gradual reduction milling, and will improve the quality of the low grade flour, at the same time it makes the ofal cleaner.

**IT MAKES A CLEAN SEPARATION** on caked and flaky meal from smooth rolls, which no other style of reel can do.

**THEY CAN BE USED TO ADVANTAGE** as a complete system of bolting, to the exclusion of the ordinary reel.

Since commencing the manufacture of these reels we have sold them in large numbers to leading millers in all parts of the country, for work in connection with all kinds of reduction machines and on every class of material, and they are giving unqualified satisfaction. We build them in six sizes, suitable for all classes of mills, and ranging in capacity from **200 to 2,000 pounds**. Write for circulars, etc.

# Geo. T. Smith Middlings Purifier Co., Jackson, Mich.

[Please Mention this paper when you write to us]

[ THE ]

## Geo. T. Smith Improved Middlings Purifier

*The Geo. T. Smith Purifier was the first successful Sieve Purifier ever used in this or any other country. The demand for it has steadily increased from the day the first machine was started.*

More than Seven Thousand are Running in the United States Alone.

## Exclusive Features.

Patent Automatic Brush.

Patent Self-Regulating Feeding  
Device.Patent Coil-Spring Eccentric Con-  
nection.

EASILY ADJUSTED.



## Exclusive Features.

Patented Application of Graded  
Controllable Air Currents.

Patent Cloth Tightener.

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same Horizontal Plane.

LIGHT RUNNING.

# ADAPTED TO ALL SYSTEMS OF MILLING.

## FIFTEEN SIZES, SUITABLE FOR MILLS OF ALL CAPACITIES.

Single, Double, and Aspirator Machines.

**SPECIAL NOTICE.**—The Geo. T. Smith Purifier is licensed under all patents owned by the Consolidated Middlings Purifier Co., and under every patent granted in the United States covering any features of value as regards the convenience, economy and efficiency of a Middlings Purifier.

[Please mention the UNITED STATES MILLER when you write to us.]



## HOW TO WORK PORCELAIN ROLLER MILLS.

(BY DR. H. SELLNICK, IN "DIE MUEHLE.")

Our this year's general meeting, in Russell, gave me the opportunity to converse with my friends about the use and the capacity of Wegmann's Porcelain Roller Mills. Although I thus had the satisfaction in the main part, to hear that the milling value of porcelain roller mills is becoming more and more recognized, and that nobody who possesses them, would be able to do without them, I also met with opinions which I had to oppose, and which showed me that the use of porcelain rollers is not yet quite understood, in such a manner as they deserve, in the interest of the progress of milling. In consideration of my advocacy of these rolls up till now, I think I may serve many by making some observations about the manner in which porcelain rolls should be worked.

The way in which to work a millstone is well known to every miller. It includes everything that is necessary to bring the millstones in a proper condition for their work according to their capacity, and to keep them in this state. It means a long series of conscientious and most careful duties, which are continuously recurring, and the neglect of which will injuriously affect the duration and proper working of the gear, as well as the grinding capacity of the stones. That it is not advantageous to give to the stones more than their proper amount of work, is also known to every miller. That this must, however, also be the case with other machines, does not seem so clear to many, and therefore they think it right to demand an amount of work from such machines, which far exceeds their capacity. This refers especially to Wegmann's Victoria Roller mill.

This roller mill has been most in demand during the last few years, and is now the one chiefly manufactured. Of 100 roller mills sold by Mr. Wegmann, 90 are Victoria Rollers and the remaining 10 are either a few of the small roller mills, with one or two pairs of small rollers, or a few large Victoria Rolls, which have porcelain rollers of 14 in. diameter, and 24 in. length. In the Victoria Roller Mill, millers are offered a machine, which combines with the, according to my convictions, only correct grinding principle of middlings, a construction which is the result of ten years' experience with about 7,000 machines. Everything that was found fault with in the porcelain rollers, by intelligent well wishing millers, and the opposition which is shown against every innovation, has been carefully taken into consideration by the inventor. Although I do not mean to assert that Wegmann's Victoria roll is so perfect, that nothing more can be improved in it, I must contradict the views of those who believe that it does not yet do enough work, and that it should be made still stronger, in order to be suitable for a greater amount of power, and in order to increase its capacity.

The wish to concentrate the working capacity of a mill in a few machines of large capacity, and thus to derive more profit from the invested capital, is very natural. The use of dismembrators, indeed, is only justified for this reason. However, in the same way as formerly with the millstones, so also the capacity of roller mills is limited. If it is attempted to increase the capacity of a machine by means of applying more power, the consequence will be that the work done is worse, or the working parts of the machine will much quicker. In order to avoid such wear, wear one should bear in mind that the working capacity of a machine is limited by its smaller or greater liability to wear. If this limit is overstepped, excessive wear, which will destroy the working parts, will consume part of the power expended on the machine. This fact cannot be obviated by greater masses of material, that is by enlarging the machine. It could only be done by using another material of greater hardness and resistance; for the nature of the material of working parts, and their capacity of resistance, limits the amount of power expended upon them.

Now, in the porcelain roller mills it is not the bearings, shafts, wheels, and other iron parts that constitute the working parts, but it is mainly the porcelain rolls that have to do the work. These iron parts could easily be replaced by harder material. The porcelain, however, is and remains porcelain, and it cannot be otherwise than it is. The working capacity of porcelain rollers, and the amount of power to be applied to them, is, therefore, limited according to the quality of the porcelain, that is, according to its strength and resistance against wear. They should not, and cannot, work with more power, and they are, therefore, accordingly limited in the quantity of work which they are able to turn out. The

Victoria Roll uses from 1½ to 2 horse power, and it can only render work corresponding to that amount of power. If it works this quantity so as to turn out better quality than other machines, that is certainly an all-sufficient advantage, which it offers to millers. Anybody who desires further advantages cannot obtain them so that they will last, by applying more power on one roller mill, but only by using more roller mills.

Wegmann's porcelain rollers are not machines for forced work. The purpose for which they are intended—the reduction of middlings and their grinding—does not require it. The material of the rollers, the porcelain, is qualified for this purpose, more and better than any other material. It is quite firm enough, and has sufficient resistance to crush middlings, and it possesses in its naturally rough surface a lasting sharpness, which is independent of all artificial aid, and which is especially suitable to take hold of the middlings, and—with the use of differential speed—to sever them and so to reduce them to flour.

It is this condition on which is based the high grinding capacity of the porcelain mass used by F. Wegmann. This grinding capacity cannot be increased by the application of more power. In order to allow it to become more effective, no great pressure is required, and, much less, a greater speed; but millers make both these mistakes in many places. Some millers believe themselves able to achieve a greater capacity by strong pressure and greater speed; they therefore call for a stronger construction of the machine, in order to be able to apply the greater amount of power required; and, indeed, such proceedings can only lead to the destruction of the porcelain rollers, in the same way as excessive work on millstones would cause their greater wear and premature end. One should endeavor to keep in use the working parts as long as possible and not to use them up quickly.

In my experience I have found that in using porcelain rollers it is not so important to let through a great quantity of middlings between the rollers, as it is to get a high percentage of finished flour from that which has passed through the rolls. The speed of the rollers, however, does not contribute towards making finished flour. For it in no way effects—as, for instance, is the case with millstones—the reduction itself, but it only quickens the change of the working points, on which the reduction takes place by means of pressure and simultaneous shifting (reduction by different speed). The quicker this change takes place, the shorter is the time for the reduction (the rubbing), and the less perfectly will it be accomplished. If, in such forced cases, the pressure of the rollers is increased, a greater percentage of production of flour may be achieved, but not without overstepping the limit which is set by the resistance to wear of the porcelain rollers, and under a consumption of power which exceeds the working capacity, and the excess of which injuriously affects the working parts themselves, that is the porcelain rollers. The same amount of power being expended on two roller mills with slow speed and less pressure will produce more in quantity and of a much better quality.

The excessive consumption of power manifests itself first in the wear of the wheels, which have to transmit the differential speed, and next on the rollers themselves, which will wear unequally. It is unavoidable that the rolls should at times and at places run empty and rub each other. The resistance which thus momentarily takes place in porcelain rollers is very great. For the rolls do not slip on each other in such cases, as they do for instance in chilled iron, because they are naturally rough and sharp, and they do not grind themselves smooth when they run empty; on the contrary, they will freshly roughen themselves. The rolls try to overcome this resistance, by repelling each other more, than while feed is between them, which may be perceived by the clattering noise of empty-running porcelain rollers. They would easily run with the same speed, but are prevented doing so by the gears. The wheels must therefore take up all these great resistances, and they must themselves give way, that is, to let go material when it gets too heavy. Such premature wear does not occur if the porcelain rollers are worked with the same attention as millstones, and if they do not get more feed than they can bear, and if no more power is applied to them than is intended for them. I know mills which have porcelain rolls in their possession for upwards of six years, and they have not worn more than necessary, and, moreover, they have remained round and fit for grinding; but I

also know millers who do not work one year with them. Why? Simply because they expect impossibilities and assume the porcelain to be indestructible. Such an opinion as the following—"That porcelain rollers should be able to reduce the middlings coming from two or three millstones" is quite unjustifiable. The Victoria roll, according to my experience, should not make more than 120 | 130 revolutions. Then it will make 50 per cent. of flour with little pressure. But he who cannot work up all the middlings which he produces with one roller mill, should use more porcelain rolls; he should not gallop, but drive "slow and sure." He who puts 100 cwt on a cart which is only made to carry 50 cwt, must not be surprised if the cart breaks down. Why should it be different with machines.—*Millers' Gazette (London.)*

## NEWS.

Burned: Lee &amp; Brown's mill at Syracuse, Mich.

Silas Corey, Lehigh, Iowa, a Gray's noiseless belt roller mill.

Barnum &amp; Keenan, Leroy, Ill., a Gray's noiseless belt roller mill.

A. J. Klinger, Greenville, O., will start up his mill in a few days, on the Case system.

H. C. Brose, Lanesboro, Pa., two pair porcelain rolls in Gray's noiseless belt frames.

R. Hockman &amp; Son, Eagle City, O., will start up their mill on the Case system in a few days.

Wooemer Bros. Distilling Co., Peoria, Ill., three pair Allis rolls in Gray's noiseless belt frames.

J. C. Mohrman &amp; Co., Syracuse, Neb., one pair Allis rolls in Gray's noiseless belt frames. Style B.

Chas. Plumbecker, Mill Grove, N. Y., two pair porcelain rolls in Gray's noiseless belt frames.

Thomas &amp; Hubbard, Watford, Wis., two pair porcelain rolls in Gray's noiseless belt frames.

Erasmus Smith, Burlington, Kas., a Gray's noiseless belt roller mill, Gray's centrifugal reels, etc.

The Case Mfg Co., Columbus, Ohio, have an order from J. D. Felt, Emporium, Pa., for 2 additional pair of rolls.

D. Thomas &amp; Son's mill at Newark, O., has just been started up on the Case System by C. E. Canon of the Case Mfg Co.

The Case Mfg Co., Columbus, O., are furnishing McCorky and Sturgeon, Troy, Mo., with one No. 1 double purifier.

The Case Mfg Co., Columbus, O., have booked an order from Geo. Seitz &amp; Son, Arthur, Mich., for one No. 1 single purifier.

C. Padgham, Union City, Mich., has ordered one additional pair of scotch rolls from the Case Mfg Co., Columbus, Ohio.

The Case Mfg Co., Columbus, Ohio, have an order from Wood &amp; Kenyon, Onawa City, Iowa, for one double break machine.

Pollock, Bellamy &amp; Co., Seater, Mo., eight pair Allis rolls in Gray's noiseless belt frames, Gray purifiers, centrifugal reels, etc.

A. &amp; J. D. Sharpless, Ashland, Del., a No. 2 four break reduction machine and two pair porcelain rolls in Gray's noiseless belt frames.

William Flemming, Esq., Sidney, N. E. W. Australia, two pair porcelain rolls in Gray's noiseless belt frames, and other machinery.

The Case Mfg Co., Columbus, Ohio, are furnishing John F. Wheeler, Newhamburg, Pa., 2 pair rolls with patent automatic feed.

Smith, Hill &amp; Co., Quincy, Ill., have ordered the Case Mfg Co., Columbus, Ohio, to ship them to Palmyra Mo., one pair smooth rolls.

The Case Mfg Co., Columbus, Ohio, have been ordered to ship A. T. Foster, Woodlin, O., one pair smooth rolls with patent automatic feed.

The Case Mfg Co., Columbus, Ohio, an order from C. B. Palmer, Dayton, Ohio, for the case patent automatic feed for his "Odell" rolls.

The Case Mfg Co., Columbus, Ohio, have an order from John Stariz &amp; Son, Rolling Prairie, Ind., for 2 pair rolls with patent automatic feed.

The Case Mfg Co., Columbus, Ohio, have an order from E. R. Townsend, Panama, Iowa, for one pair smooth rolls with patent automatic feed.

The mill lately remodeled to the Case gradual reduction system and owned by Mat. Wolfe, DeGraff, O., will be in operation in a few days.

The Case Mfg Co., Columbus, O., have an order from F. Waldorf &amp; Son, Monroe, Mich., for one pair smooth rolls with patent automatic feed.

The Case Mfg Co., Columbus, Ohio, have been favored with an order for one pair rolls with patent automatic feed from J. S. Bristol, Auburn, N. Y.

Thornburg &amp; Glesser, 47 and 49, W. Lake St., Chicago, are out with a new circular description of their bolts, buckets, etc. They report business very good.

Thos. Bradford &amp; Co., Cincinnati, O., have ordered one "Little Giant" break and scalper, making three separations, from the Case Mfg Co., Columbus, Ohio.

Dennis &amp; Slough, Westerville, Ohio, have been running their mill for three weeks past with Case system. They report splendid results and everything satisfactory.

The Case Mfg Co., Columbus, Ohio, have an order from A. W. Smith, Tregarden, Ohio, for one Little Giant break machine and scalper making three separations.

A. F. Orway &amp; Son, Beaver Dam, Wis., are remodeling a mill at Markeson, Wis. They have ordered a three roller break machine from the Case Mfg Co., Columbus, Ohio.

The Case Mfg Co., Columbus, Ohio, have an order from J. H. T. Case, Greens Springs, Ohio, for one Little Giant break machine and 2 pair rolls all to have their patent automatic feed.

The Case Mfg Co., Columbus, Ohio, are furnishing J. and T. Crawford, Shiloh, O., with a Little Giant break machine, two pair rolls with patent automatic feed and one Case centrifugal reel.

Mess. Stewart &amp; Ward, Bellaire, O., have contracted with Mess. Edw. P. Allis &amp; Co., Milwaukee, Wis., for remodeling their mill to the roller system and will use ten pair of Allis rolls in Gray's noiseless belt frames.

Mess. T. Lloyd, Fulmar &amp; Co., Halbo, Pa., are remodeling the roller system and have contracted with Mess. Edw. P. Allis &amp; Co., Milwaukee, Wis., for the entire outfit

of the celebrated Allis rolls in Gray's noiseless belt frames. The mill when refitted will have a capacity of 125 bbls. per 24 hours.

The following are a few of the recent orders recently received by Mess. Edw. P. Allis & Co., Milwaukee, Wis., from the mill furnishing trade.

Amerdt & Son, Piqua, Ohio, a Gray's noiseless belt roller mill.

C. E. Edgerton, Horicon, Wis., a Gray's noiseless belt roller mill.

G. C. Volkert, Jefferson City, Mo., a Gray's noiseless belt roller mill.

J. W. Kaufmann, St. Louis, Mo., a Gray's noiseless belt roller mill.

C. Arensburg, Marthasville, Mo., a Gray's noiseless belt roller mill.

Pierce Mill Co., Pierce, Neb., a Gray's noiseless belt roller mill.

Jones & Co., New York City, a Gray's noiseless belt roller mill.

Lawson & Bell, Gallipolis, Ohio, a Gray's noiseless belt roller mill.

P. E. Dawson, Hancock, Md., a Wegmann's porcelain roller mill.

Raymond Mill Co., Osceola, Iowa, two Wegmann's Porcelain roller mills.

Halliday Bros., Cairo, Ill., six pair Allis rolls in Gray's noiseless belt frames.

E. Middleton & Son, Greenville, Mich., a Gray's noiseless belt roller mill.

A Gray's noiseless belt roller mill for Mess. F. S. Harzell & Son, Chalfort, Pa.

Dow, Gleman, & Hancock, Davenport, Iowa, a Gray's noiseless belt roller mill.

Lamberson & Hallinghead, Colon, Mich., a Gray's noiseless belt roller mill.

One Gray's noiseless belt roller mill for Mess. F. A. & B. L. Bean, Fairbault, Minn.

Nine pair Allis rolls in Gray's noiseless belt frames for Clark Bros., Augusta, Kas.

Four pair Allis rolls in Gray's noiseless belt frames for M. Simonds, New Prague, Minn.

Allaire, Woodward & Co., Peoria, Ill., two Gray's noiseless belt roller mills, style B.

Johnson & Jarrett, Des Moines, Iowa, seven pair Allis rolls in Gray's noiseless belt frames.

A Gray's noiseless belt roller mill for Dominion City Mill Co., Dominion City, Manitoba.

B. F. Gump, Chicago, Ill., a Gray's noiseless belt roller mill for N. R. Parks, Nevada, Ohio.

Upham, Son & Co., Blue Rapids, Kas., ten pair Allis rolls in Gray's noiseless belt frames.

Ten pair Allis rolls in Gray's noiseless belt frames for A. L. Lowell & Bros., St. Lawrence, D. T.

Simmons, Arndt & Co., Kenosha, Wis., two pair porcelain rolls in Gray's noiseless belt frames.

Ferd. Scrumaker, Akron, Ohio, two pair more porcelain rolls in Gray's noiseless belt frames.

Phoenix Distilling Co., Chicago, Ill., eight pair celebrated Allis rolls in Gray's noiseless belt frames.

Wells & Nieman, Schnyler, Neb., eight pair Allis rolls in Gray's noiseless belt frames, Gray's purifiers, etc.

Great Western Mfg Co., Leavenworth, Kas., a Gray's noiseless belt roller mill for W. L. Challin, Wetmore, Kas., a Gray's noiseless belt roller mill for Russell & Balcey, Wetmore, Kas.

Bradford Mill Co., Cincinnati, Ohio, four pair Allis rolls in Gray's noiseless belt frames, for Dorge & Co., Aurora, Ind.

Mess. Willford & Northway, Minneapolis, Minn., F. A. Townsend & Co., Columbus, D. T., one Gray's noiseless belt roller mill, three Gray's noiseless belt roller mills for Thompson & Smith, Cannon Falls, Minn.

A. F. Ordway & Son, Beaver Dam, Wis., four pair Allis rolls in Gray's noiseless belt frames, for a job at Markeson, Wis.

Richmond City Mill Works, Richmond, Ind., a Gray's noiseless belt roller mill for Meriden Mill Co., Meriden, Kas.

C. A. Pillsbury & Co., Minneapolis, Minn., ten pair more of the celebrated Allis rolls in Gray's noiseless belt frames.

Wolf & Hamaker, Allentown, Pa., six pairs of Allis rolls in Gray's noiseless belt frames for Jno. H. Lick, Union Forge, Pa.

Edw. P. Allis & Co., San Francisco, Cal., sixteen pair Allis rolls in Gray's noiseless belt frames, for jobs on Pacific Coast.

J. R. Longfellow, Elk Falls, Kas., through Mess. Webber & Mans, Atchison, Kas., ten pair Allis rolls in Gray's noiseless belt frames.

Geo. W. Waterhouse, Jr., Salem, Oregon, ten pair Allis rolls in Gray's noiseless belt frames, for Havermale & Davis, Spokane Falls, Washington, D. C.

C. W. Mehendorf, East Brook, Pa., has ordered the Case Mfg Co., Columbus, O., to ship him at Nelson Station, Pa., one Little Giant break machine and one pair smooth rolls to go in the mill he is remodeling at that place.

M. Caspar & Son, Mt. Calvary, Wis., are remodeling and have contracted with Mess. Allis & Co., Milwaukee, Wis., for a No. 2 four break machine, Gray's noiseless belt roller mill, etc., to change their mill to the roller system.

Six pair of rolls and one Little Giant break machine, all to have patent automatic, have been ordered from the Case Mfg Co., Columbus, Ohio, for Eastman & Son, Noshara, Iowa. The order was taken by J. T. Burkett.

Lawson & Bell, Gallipolis, Ohio, have contracted with Mess. Edw. P. Allis & Co., Milwaukee, Wis., for twelve pair Allis rolls in Gray's noiseless belt frames and the other machinery necessary to make their mill a 125 bbl. mill on the roller system.

Mess. Edw. P. Allis & Co., Milwaukee, Wis., have received the contract for remodeling Mr. Thos. Lytle's mill at Red Oak, Iowa, and will put in a No. 2 four break machine. Four pair Allis rolls in Gray's frames, Gray centrifugals, purifiers, etc.

The first grist mill built in Pennsylvania was by John Print, 1643, on the Darby road near Philadelphia. In the succeeding century there were established eighteen mills within ten miles of Lancaster, alone, using improved Oliver Evans and Ramsey machinery.

H. & D. Lucas, Jewett, Ohio, have concluded to remodel their mill to the gradual system and have placed their order with the Case Mfg Co., Columbus, Ohio, for rolls, purifiers, centrifugals, scalpers, etc. Mr. F. A. McKinsie will superintend the millwright work.

Havermale & Davis (Echo Mill Co.), Spokane Falls, Washington Territory, are about to increase capacity to 600 bbls. Present capacity 125—water power.



P. J. Hammer's mill at Andover, Ill., burned in August last with all its contents. Total loss \$11,100, no insurance. Mr. Hammer has already contracted with the John T. Noye Manufacturing Company, Buffalo, N. Y., for the rebuilding of his mill on the latest improved plans and expects to be ready to start up in November.

There are eight or ten rice-mills in New Orleans, and ever since the advent of the new rice crop they have been kept running night and day, until the production of clean rice burdens the market somewhat. To prevent a further accumulation, all the mills agree, after Oct. 13, to make only half-time and thereafter stop night work.

The Case Mfg Co., Columbus, O., some time ago furnished Banks and Sweeney, Blackburn, Mo., with one Little Giant break machine, two pairs rolls and one No. 2 double purifier. They have now decided to change their mill to the full roller system and have placed their order with the above company for 6 pair rolls, Centrifugal reels, scalpels, etc.

If a father wishes to give his son a legacy that will endure while life exists, let him send him to an institution where he can obtain a practical education, and he will have the satisfaction of knowing that he has given him what is better than houses, lands and farms, or even gold or silver. These things may take wings and suddenly fly away; but this knowledge will last while life and reason exist.—*Horace Mann.*

#### ENGINE ITEMS.

The Cleveland Milling Co., of Cleveland, Ohio, have ordered a 30x60 Reynold's Corliss engine complete, from Mess. Edw. P. Allis & Co., Milwaukee, Wis.

Mess. Dehner, Wuerpel, M. B. Co., St. Louis, Mo., are putting in a 12x30 Reynold's Corliss engine; made by Edw. P. Allis & Co., Milwaukee, Wis., for parties at Ash Grove, Mo.

Mr. T. B. Walker, has ordered a complete saw mill outfit of Mess. Edw. P. Allis & Co., Milwaukee, Wis., including a 26x42 Reynold's new style engine. Mr. Walker will start his mill at Crookston, Minn.

Mess. Richards & Butler, Indianapolis, Ind., are furnishing a mill at Mt. Vernon, Ill., and putting in 12x36 Reynold's Corliss engine and outfit ordered from Mess. Edw. P. Allis & Co., Milwaukee, Wis.

The Diamond Match Co., Ontonagon, L. S. Mich., are soon to add a new steam power and have placed an order with Mess. E. P. Allis & Co., Milwaukee, Wis., for a 16x42 Reynold's new style engine complete.

Mess. Schmidt Bros. & Co., Oshkosh, Wis., are putting in a roller mill and have ordered a 16x42 Reynold's Corliss engine from Mess. Edw. P. Allis & Co., Reliance Works, Milwaukee, Wis., to drive same.

The J. S. Keater Lumber Co., of Moline, Ill., is putting in a new saw mill at that place and have placed an order with Mess. Edw. P. Allis & Co., Milwaukee, Wis., for the complete outfit including a 26x48 Reynold's new style engine for furnishing power for same.

Mr. B. Gilbert, Glasco, Kas., recently placed an order with Mess. Edw. P. Allis & Co., Milwaukee, Wis., for the 12x36 Reynold's new style engine, now at the Milwaukee Exposition driving electric lights. Mr. Gilbert will use the engine to furnish the power for his mill.

Mess. Edw. P. Allis & Co., of the Reliance Works, Milwaukee, Wis., have recently received an order from the Ft. Madison Lumber Co., Ft. Madison, Iowa, for a complete saw mill outfit, gang, gang edger, etc., and an 18x16 upright gang engine. Mess. Allis & Co., have recently received quite a number of orders for saw mills and saw mill engines, and are building a new engine especially adapted for such purposes.

### WALKER BROS. & CO.,

FLOUR AND GRAIN

Commission Merchants

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### THE CENTURY

PROGRAMME FOR 1883-'84.

THE programme for the fourteenth year of this magazine, and the third under the new name, if anything, more interesting and popular than ever. With every season, THE CENTURY shows a decided gain in circulation. The new volume begins with November, and, when possible, subscriptions should begin with that issue. The following are some of the features of the coming year:

A New Novel by George W. Cable, author of "Old Creole Days," etc., entitled "Dr. Sevier," a story of New Orleans life, the time being the eve of the late Civil War.

"Life in the Thirteen Colonies," by EDWARD EGGLSTON, separate illustrated papers on subjects connected with the early history of this country.

Three stories by Henry James, of varying lengths, to appear through the year.

The new astronomy, untechnical articles, by Prof. S. P. LANGLEY, describing the most interesting of recent discoveries in the sun and stars.

A Novelleto by H. H. Boyesen, author of "Gundar," etc. A vivid and sparkling story.

The New American Architecture a series of papers descriptive of the best work of American architects in Public Buildings, City and Country Houses, etc. To be profusely illustrated.

A Novelleto by Robert Grant, author of "Confessions of a Frivolous Girl," etc., entitled "An Average Man,"—a story of New York.

The Broad-winners, one of the most remarkable novels of the day, to be completed in January.

"Christianity and Wealth," with other essays, by the author of "The Christian League of Connecticut," etc., on the application of Christian morals to the present phases of modern life.

Consisting about the Gulf of St. Lawrence, a series of entertaining articles, profusely illustrated.

Scenes from the Novelists, HAWTHORNE, GEORGE ELIOT, and CABLE, with authentic drawings.

On the Track of Ulysses, the record of a yacht-cruise in the Mediterranean identifying the route of Ulysses on his return from the Trojan war.

"Garfield in England" extracts from his private journal kept during a trip to Europe in 1887.

"The Silverado Squatters," by ROBERT LOUIS STEVENSON, author of "New Arabian Nights."

There will be papers on outdoor England, by JOHN BURNHUGH and others, a beautifully illustrated series on Dante, a number of papers by the eminent French novelist ALPHONSE DAUDET, articles on art and archaeology by CHARLES DUDLEY WARNER and others, illustrated papers on sport and adventure, short stories by the leading writers, essays on timely subjects, etc., etc.

Subscription price, \$1.00 a year; single numbers sold everywhere, at 5 cents each. All dealers receive subscriptions, or remittance may be made direct to the publishers by postal or express order, registered letter, bank check, or draft.

SPECIAL OFFERS.—To enable new subscribers to begin with the first volume under THE CENTURY name, we make the following special offers:

A new subscriber beginning with November, 1883, may obtain the magazine for one year from date, and the twenty-four previous numbers, unbound for \$3.00. Regular price for the three years, \$12.00.

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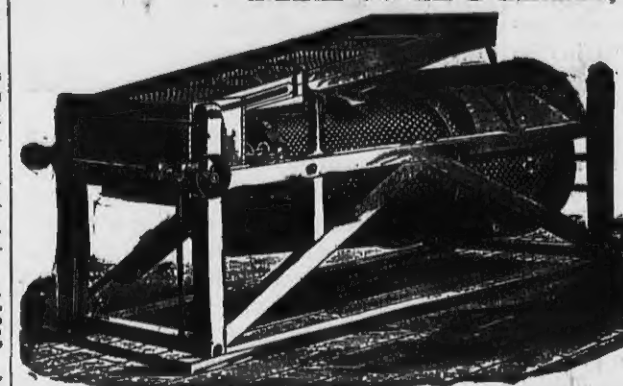
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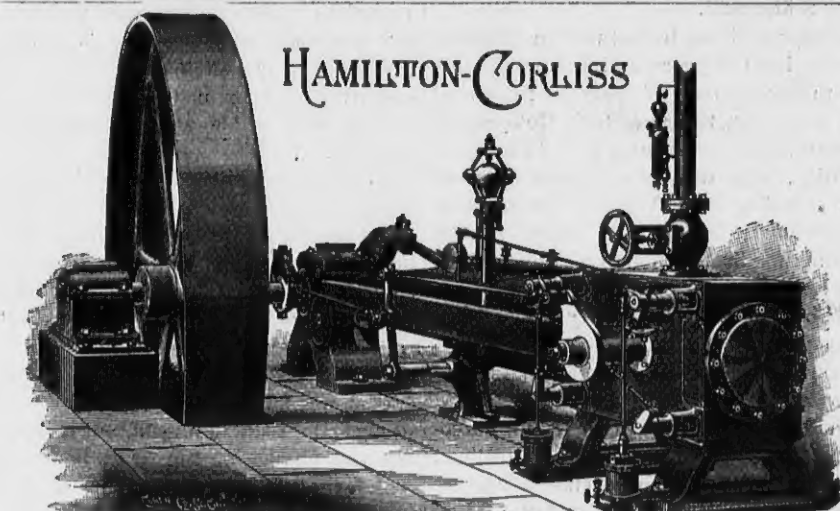
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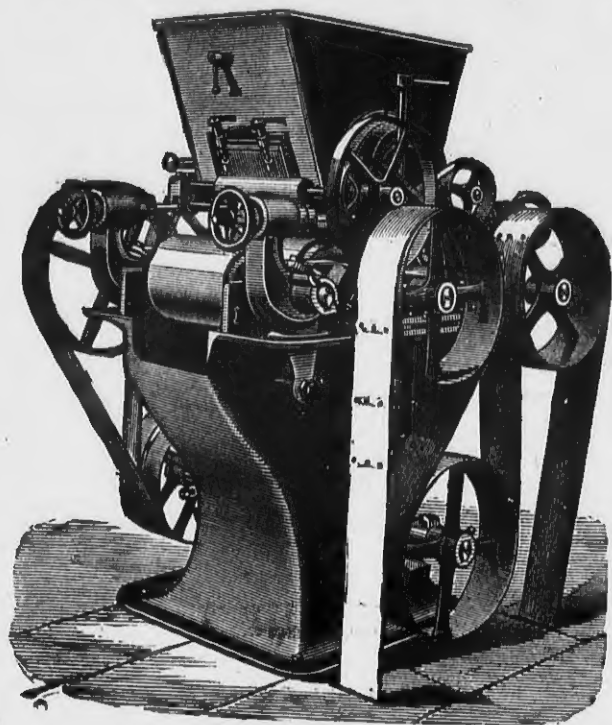
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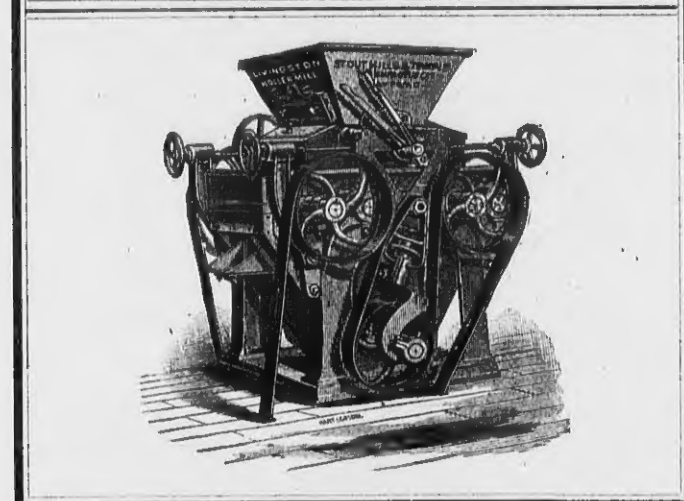
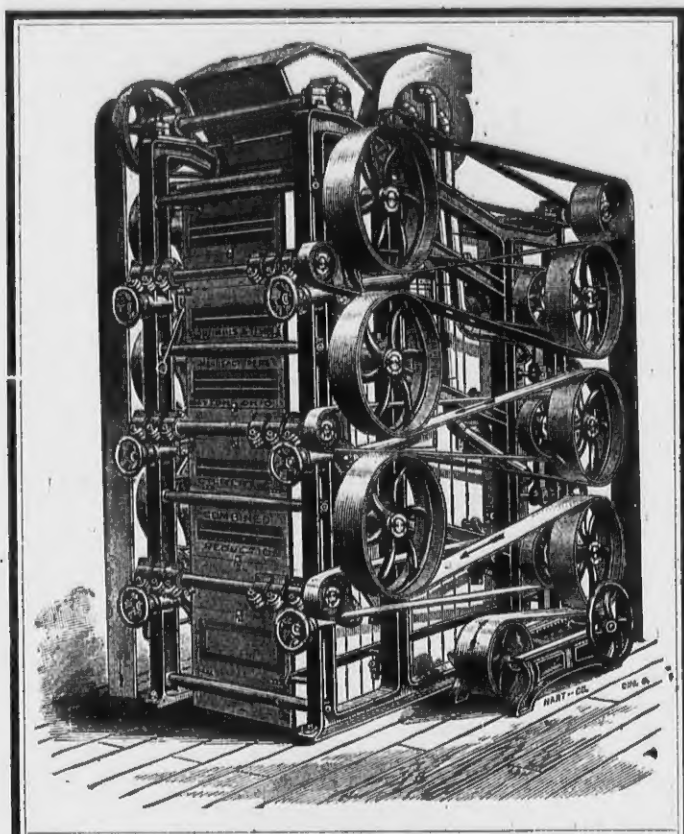
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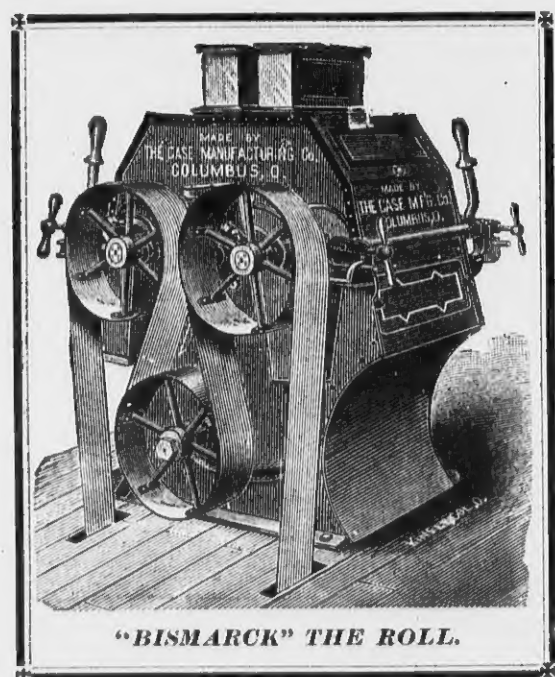
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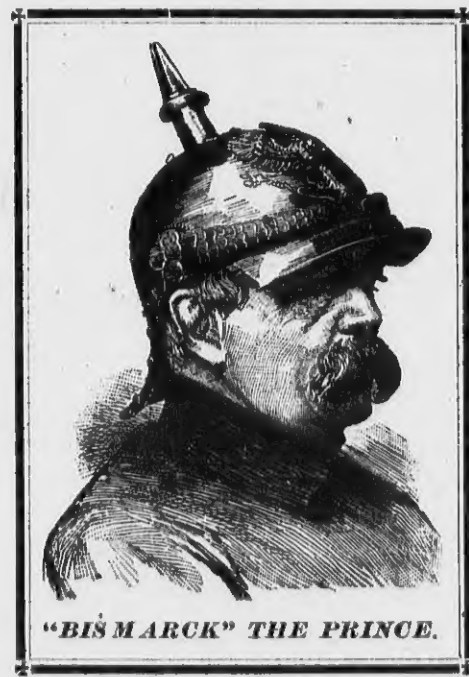


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